mental health digest

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cover story

Aggression

Scientists all over the world are investigating the causes, expressions, and mechanisms of aggression in many species and in many settings. One such study, featured on page 5 of the *Digest*, focused on aggression among free-living chimpanzees. A subject of the study, pictured on the cover, is an adult male chimpanzee preparing to hit a strange object—his reflection in a mirror. This issue of the *Mental Health Digest* includes several articles on aggression and violence. (Photograph courtesy of Baron Hugo van Lawick.)

mental health digest

The *Mental Health Digest* is a monthly publication designed to reflect the whole spectrum of mental health and to present a broad sampling of scientific subject matter and professional points of view. It contains condensations of material selected from the current mental health literature. The condensations are published with the approval of the authors and publishers for use in the *Mental Health Digest* only.

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The NIMH Program in Individual Violent Behavior

The term *violence* generally is used to describe behavior which leads to physical injury of other persons. Although not all forms of violence are law-violating, legal sanctions proscribe many types of violence and reflect a societal opposition to violence plus a need to regulate and control such behavior. The study of violence is germane to several behavioral, biomedical, and social science disciplines, and it is a prime concern within the field of crime and delinquency. Within recent years increasing rates of violent crime, civil disorders, and assassination of national leaders have created widespread societal alarm and apprehension. These phenomena clearly require scientific scrutiny and understanding of the mechanisms of violence.

The National Institute of Mental Health's Center for Studies of Crime and Delinquency is deeply involved in the study of individual violent behavior as part of its larger mission in the prevention, control, and treatment of deviant behavior which violates societal law or which comes to be viewed and handled as mental illness. The NIMH program in individual violent behavior has focused on developing better understanding and knowledge about the aggressive, violent, and destructive behaviors which affect large numbers of the population. The emphasis, therefore, has been on obtaining more accurate information concerning the development, learning, and varying expressions of violent behaviors. Such information and understanding are essential to the development of action programs for prevention, screening, prediction, and for the treatment and handling of such behavior.

In the area of individual violent behavior the program of the NIMH Center for Studies of Crime and Delinquency includes the following objectives: to provide expert consultation and technical assistance for programs in the area of individual violent behavior; to stimulate research; to develop a comprehensive strategy for coordinating basic and applied research; to develop materials for community education; and to design and conduct intramural research and training programs pertaining to mentally disordered offenders who have manifested violent and dangerous behavior.

Research Programs

NIMH intramural research—Studies conducted at Saint Elizabeths Hospital, Washington, D.C. have included efforts to determine personality characteristics and behavioral patterns of women patients who had assaulted or killed their children; a descriptive study of "White House cases," namely, individuals who were hospitalized following their threats against the President or other high Government officials; and a series of studies on assaultive patients committed to the maximum security section of the hospital.

The Mental Health Study Center, located in Adelphi, Maryland, has been involved in experimental programs and activities related to the understanding, prevention, and control of individual violent behavior within the context of the community. Programs have involved work with individuals and families, with high-risk groups, with community agencies, and with citizens who represent more general community-wide concerns. Violent behavior and community attitudes toward violence have been studied,

and counseling and consultation services have been provided to the community.

Studies of aggression—Over the past several years, the NIMH has supported a number of research studies pertaining to aggression and violence. One investigation examined the interaction of social-environmental and psychological variables in certain forms of aggressive and violent behaviors. Aggressive and inhibited boys and their parents were compared in order to determine the development of aggressive modes of behavior and related characteristics. Results indicated that parental patterns of reward and punishment of aggressive behavior were important determinants of the boys' choice of aggressive reactions to frustration and of the nature of aggression displayed.

Another project focused on the relationship between patterns of aggressive behavior and sociocultural conditions of learning in children, particularly emphasizing parental socialization techniques related to the child's aggressive behavior. Subjects of the study included the entire third grade population of a county, their teachers and parents. Results showed that physical punishment does not foster the kind of parental identification conducive to conscience development. By contrast, methods of punishment which temporarily withhold parental attention and approval as consequences of misbehavior seemed more conducive to conscience development. Such findings imply potential control and possible prevention of violent behavior through the inhibition of aggression as a function of socialization.

In an effort to determine the extent to which aggression is "transmitted" from aggressive adults to children, one set of experiments involved children who observed an individual exhibiting physical and verbal aggression; a second group viewed the same model behaving in a subdued, inhibited manner. Children in a control group were not exposed to either model. After exposure to their respective models, all children—including those in the control group—were mildly frustrated and tested for the amount of imitative and nonimitative aggression. Results demonstrated that exposure to aggressive models tends to heighten children's aggressive responses to subsequent frustration.

Another laboratory study extends earlier experiments by comparing the effects on children's behavior of actual versus film-mediated aggression models. One group of children viewed a movie showing adults portraying aggressive acts; another group viewed a televised film of a model costumed as a cartoon cat exhibiting aggressive behavior. Following exposure to their respective models, all children—including those who had received no exposure—were mildly frustrated and tested for the amount of imitative and nonimitative aggression. Results confirmed those of the previous experiment: exposure to aggressive models is highly influential not only in reducing children's inhibitions over aggression, but also in shaping the *form* of their behavior. The finding that film-mediated models are as effective as real life models suggests that televised models may substantially influence behavior and that such experiences can no longer be ignored in conceptualizations of personality development and the social learning of aggressive modes of behavior.

Studies of crime and violence—The criminal-victim relationship in crimes of violence has been carefully examined in an effort to establish patterns of victimization. Questionnaire, interview, and court record data were

gathered on 800 prison inmates who had committed crimes of violence, and those findings were compared with similar data on victims of the offenses. Selected findings strongly suggest that certain types of individuals are more likely to become victims of violence than others.

Another significant study sought to develop a systematic classification of violence-prone offenders. The hypothesis tested was that persons engaged in violent behavior can be reliably and meaningfully classified—and therefore more reliably and meaningfully treated—by isolating the kinds of interpersonal strategies which give meaning to their behavior. Emphasis has been on the development of a typology of violence according to the purpose for which violent behavior was manifest. Typologies were based on materials from case records and from individual depth interviews on situations leading up to the violent incident, including feelings before, during, and after the act, plus a description of the life circumstances of the offender at the time of the act.

Mental patients were studied to determine whether they are more dangerous and violence-prone than persons in the general population, and the study did *not* support the popular notion that mental patients are unpredictable and dangerous.

Researchers are now attempting to develop theoretical hypotheses about the suicide-homocide relationship. The concept of "suicide by victim-precipitated homocide" is central in the data analysis. Accumulated file records of cases of civilians killed by police in the line of duty are being analvzed, along with cases of police killed by citizens. Emphasis is on circumstances leading up to the fatal act, the antecedents, and the violence-producing maneuvers by the involved actors. The influence of social attitudes on the understanding of suicide-homocide will also be studied.

The possible relationship of chromosome abnormalities and violence—Reports have appeared in recent years which suggest that the prevalence of an extra Y chromosome in males (i.e., a 47,XYY chromosome complement in place of the normal 46,XY complement of the male) was markedly higher among criminal institution inmates, sex offenders, and assaultive patients in security hospitals. Although these widely publicized studies have provoked much speculation, evidence to date requires great caution in generalizing about the causal relationships between such genetic anomalies and subsequent behavior. Present knowledge about XYY males is derived largely from obviously biased populations—criminals and other institutionalized groups. Thus, there is a critical need for careful and systematic research to learn about the general prevalence rates of the XYY anomaly and also to distinguish and more precisely characterize this phenotype.

An NIMH project in this area will seek to determine prevalence figures for XYY males by karyotyping approximately 14,000 males from institutions for delinquent and emotionally disturbed youngsters, as well as from the general population. The project is designed essentially to develop careful prevalence data about XYY chromosome anomalies in a deviant as well as a nondeviant population.

In another study three groups of XYY subjects are being studied to determine the differential extent of their involvement in aggressive behavior. Results of this research, based on intensive psychological, social-developmental, and steroid-growth hormone analyses, are expected to provide important information about the charac-

teristics of XYY individuals, their pattern of socialization, and their psychological and social functioning.

The 47, XYY chromosomal anomaly was also the topic of a 2-day conference sponsored by the Center for Studies of Crime and Delinquency in June, 1969. This conference brought together a group of experts from the fields of genetics, psychiatry, psychology, sociology and law to discuss research, ethical, and social policy issues related to this topic. A consensus was reached that the demonstration of the XYY karyotype in an individual does not in our present state of knowledge support any definite conclusions about the presence of mental disease or defect in that individual; further scientific evidence is clearly needed. While the popular press has conveyed the impression that the XYY chromosomal abnormality is clearly related to criminal behavior, this general assertion, according to the conference participants, is quite misleading and premature since available research evidence is not adequate to support this interpretation. General conclusions and recommendations from the conference were published in *Report on the XYY Chromosome Abnormality,* NIMH, 1970. (A copy of this report, PHS Publication No. 2103, can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, 60¢.)

Training innovations—A training program in the area of violence is attempting to reduce the potential for violence in contacts between the police and the public. This research-oriented project derives from and builds upon previous research supported by NIMH to study violent offenders. In the curent program, police officers who have had several violent encounters with citizens are exposed to a comprehensive training program employing such methods as psychodrama, role-reversal, sociodrama, and simulation of situations with the potential for violence. Trainees are encouraged to discover alternate responses for dealing with situations having a high probability for eliciting violence. Evaluation of the training program will include comparisons of the job performance trainees with a matched group of non-trained officers.

The National Institute of Mental Health anticipates expanding its activities aimed toward understanding, prevention, and control of violence through programs of the Center for Studies of Crime and Delinquency and through certain components of the Division of Extramural Research Programs.

Goals for further research include: better understanding of violent individuals, situations and settings related to their behavior, and the purpose and motivation for violent behavior; efforts to better understand family and other social learning experiences which tend to facilitate the development of aggressive patterns of behavior in children; study of the nature and extent of the interactive relationship between biochemical, neurological, psychological, and socio-environmental variables in producing violent behavior; determination of the effects of news media on attitudes, ideology, and behavior; and studies of societal attitudes, information, and beliefs regarding the phenomena of violent behavior.

Some Aspects of Aggressive Behavior in a Group of Free-Living Chimpanzees

JANE VAN LAWICK-GOODALL

In 1963 I established a feeding area where chimpanzees could get bananas and, for the first time, it became possible to make fairly regular observations on a number of individuals. By 1964 some 40 chimpanzees were visiting the feeding area, some regularly, others infrequently. Since 1964 observations on the chimpanzees have been kept up on a daily basis. It is sometimes possible to follow a group of chimpanzees for hours as it wanders through the forest without observing a single aggressive incident. At the artificial feeding area, however, where the chimpanzees compete for a favored food which is in comparatively short supply, disputes, including fighting, occur more often, giving an opportunity to study the mechanics of aggressive behavior.

Those aggressive behaviors which do not involve physical conflict, but which merely elicit submissive behavior, avoidance, or fight in the individual to whom they are directed may be termed threat; and chimpanzees, like most animals, solve more disputes by means of threat than by actual fighting. A dominant chimpanzee may fix his subordinate with an intent and prolonged stare, he may slightly jerk his chin upward while uttering a soft bark, he may raise his arm rapidly, or he may run toward an opponent in an upright position, waving his arms in the air while uttering loud yells. These patterns are of interest since they closely resemble some of the aggressive repertoire of man himself.

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When actually attacking an opponent a male chimpanzee often tries to jump onto his victim's back and stamp hard with his feet. A small chimpanzee may be actually raised from the ground and slammed down repeatedly, or it may be dragged along by one limb. Other attack patterns include biting, hitting, grappling, pulling out hair, and scratching. Female chimpanzees are more likely to clinch, rolling over and over on the ground together, or to pull out each others' hair or to scratch. Most attacks last no more than half a minute and even those which appear, to a human observer, to be extremely vicious, seldom result in injury to either the aggressor or his victim.

Most adult male chimpanzees hurl rocks or branches, usually at random during their "charging displays." In addition to this random throwing, many male chimpanzees and some females deliberately use objects as weapons in aggressive contests. While most chimpanzees aim quite well, they seldom score hits unless the targets are less than 5 or 6 feet away. These chimpanzees also occasionally use sticks as clubs to hit each other, baboons, or other objects. Usually, however, while a large stick may be wielded forcefully, the chimpanzee then throws or drops his weapon prior to contact with his target. The response of a chimpanzee who is threatened or attacked varies with respect to the relative social status of the two concerned, the relationship between them, the cause of the dispute, and the violence of the aggressive act. Thus if one chimpanzee mildly threat-

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ens another of only slightly lower rank than himself who, for instance, approaches his food too closely, the recipient of the gesture may seem to ignore the threat or, at most, slightly withdraw. If the threatened chimpanzee is much lower in status, the same gesture may elicit rapid withdrawal, loud screaming, submissive behavior, or all of these behaviors. Once a subordinate has been attacked it may either crouch to the ground screaming until the attack is over, or it may struggle to escape and rush away. The closer the social status of the victim to the aggressor, the more likely it is that the former will turn and attack in self-defense.

Some major causes of aggression among our chimpanzees are as follows: At the artificial feeding area the most frequently observed cause of aggressive incidents was competition for bananas. Under more normal conditions, however, aggression over food is comparatively rare since most chimpanzee foods are present in abundance. If a chimpanzee is frustrated in achieving some goal, or if he is attacked or threatened by a higher-ranking individual and dare not reciprocate, he frequently redirects his aggression at a lower-ranking animal. Alternatively he may rush off in a charging display. Such a display often seems to calm a frustrated chimpanzee. Sometimes a chimpanzee threatens or attacks a subordinate who has failed to respond correctly to some social signal. At times adults appear to be "irritated" by noisy inferiors. One submissive pattern involves the lower-ranking individual bobbing up and down and uttering loud grunts in front of his superior, often actually getting in the way, and sometimes this results in an attack from the dominant individual.

Strong bonds of affection or friendships may develop between pairs of chimpanzees, particularly between mothers and their offspring, and siblings. A mother will rush to the defense of her infant, often threatening or attacking the chimpanzee responsible for hurting or frightening her child. She may do the same for her offspring when he is a fully mature male, and he will hurry to her defense in the same way. It sometimes happens that when one individual is attacked, other chimpanzees who were not apparently involved in the original dispute hurry over to join in, attacking the victim when it escapes from the original aggressor. Fear sometimes seems to spark off aggression. When a paralytic disease swept through the area, some chimpanzees became paralyzed in one or more limbs. When other chimpanzees saw the stricken chimpanzee for the first time, they initially showed fearful responses and subsequently displayed aggressive behavior toward or actually attacked their injured companions. A good deal of aggression occurred during interactions between two individuals which I have termed "dominance fights" although, in fact, such encounters only rarely involved actual attack. It is in connection with the dominance status of a male that his charging display appears to play a vital role: in principle, the more frequently and the more vigorously he displays, the higher in the social ladder he is liable to climb.

After being threatened or attacked, a subordinate often approaches the aggressor and directs toward him submissive, or appeasing behavior. This includes such gestures and postures as turning the rump toward the aggressor, crouching on the ground in front of him, holding out a hand toward him, touching or kissing him. The dominant chimpanzee, in many cases, responds by gestures such as reaching

out to touch the subordinate, holding its hand, patting it gently on the head, back or other part of the body, kissing it, briefly grooming or embracing it. Such behavior serves to reassure the subordinate. Some individuals, particularly juvenile and young adolescent males, show a definite need for such reassurance: if the aggressor ignores their approach and submission they may maintain their appeasing gestures and postures, while screaming and whimpering, until he does respond. Reassurance behavior is undoubtedly of great importance in maintaining the relaxed relationships which are normally apparent between most of the different individuals of a wild chimpanzee group. It is of interest that so many of the gestures and postures involved in chimpanzee submissive and reassurance behavior so closely resemble our own, not only in appearance but, more importantly, the contexts in which they occur.

The charging display of the male chimpanzee plays an important role in bettering, or at least maintaining, his social status. While most displays are not deliberately directed toward another individual, they do, nevertheless, serve to impress other chimpanzees present. Even much older individuals sometimes hurry out of the way of an adolescent male when he rushes close by during a vigorous charging display.

Comparison of Chimpanzee and Man

The chimpanzee is close to man in many ways. Recent biochemical research suggests that, in some respects, the chimpanzee is biochemically as close, or closer, to man than he is to the gorilla. Again the communication patterns of chimp and man, on the emotional nonverbal level, together with the contexts in which they may occur, are often remarkably similar. Thus an understanding of the aggressive behavior of chimpanzees may be of help in understanding some of our own. In the chimpanzee, actual fighting, as compared with the use of threat and bluff is, under normal circumstances, relatively infrequent. Humans, for the most part, also make use of threat and bluff, including verbal aggression, far more than physical fighting. However, when people do fight they are far more likely to harm one another than are chimps, principally because men so often use weapons: It is ironical, in a way, that the forms of attack most likely to kill involve the least strenuous physical exertion—such as shooting. It would almost seem that, in the evolutionary sense, man has not yet adjusted behaviorally to the comparatively recent acquisition of weapon use in intraspecific fighting.

Sometimes the causes of aggression seem quite similar in man and chimp. A mother, whether chimp or human, is likely to feel aggressive toward anyone or anything which threatens to harm or does harm her baby. Two individuals, whether chimp or human, may become aggressive when competing for a particular object which each wants, whether this be a bunch of bananas in the case of chimps, or an attractive girl in the case of humans. Also many chimpanzees, like many humans, are constantly alert for a chance to better their social position, and sometimes this leads to aggression in both species. However, while the biological roots of aggression may not be too dissimilar in man and chimp, the expression and causes of ill feeling and anger in man have been immeasurably complicated by his development of self-esteem and pride, the acquisition of moral values, the hunger for material possessions, and the development of a spoken language.

Chimpanzees usually settle a dispute

immediately. This does not mean that, even when a dispute appears to be over, the subordinate may not try and retaliate subsequently, if he sees a good chance. But it does mean that, for the most part, high- and low-ranking individuals are able to coexist peacefully and enjoy relaxed relationships with each other for much of the time. Human relationships, however, are necessarily far more complex. Often pride prevents a person from making an apology after a dispute, even when he knows he was in the wrong. Thus two individuals, normally friends, may avoid each other for days; indeed, some quarrels are never made up. Sometimes differences of opinion over a moral or religious matter can only be solved by the persons concerned shaking hands and "agreeing to differ"; but only too often they do no such thing and part with feelings of animosity, each feeling certain that he is "right."

The development of man's superior intellect has complicated his patterns of interindividual communication in all respects, and this is particularly true of the development of a verbal language. In so many human interactions words have largely taken over for gestures. When one chimpanzee gestures to another, there is no misunderstanding; the recipient of the signal interprets the message correctly. Some chimpanzee gestures, particularly those relating to threat and submission, can be correctly interpreted even by naive human observers and by baboons. When we turn to humans, however, there may be misunderstandings even at the family level as to the meaning of verbal signals, let alone when people of different nations and different cultures are trying to communicate. How often do words serve to rouse aggression in man when the speaker means to do no such thing? Conversely, a verbal threat is not always recognized as such so that a correct response is not made.

Through verbal language a human being can communicate with a large number of people; words can be used successfully to rouse people to love or hate. While a chimpanzee, by means of simple gestures and calls, can sometimes rouse a member of his immediate family to come to his defense, man, by communicating his ideas and ideals, his hopes and his fears, can awaken sympathy in people far beyond his family circle. If he is skillful in using words he can unite an entire group, sometimes almost an entire nation, so that each individual feels himself part of a superfamily, and then, if one member of his family is threatened, aggression may be roused in the others. Is it, ironically, man's very ability for loving and self-sacrifice which, so often, leads him to kill others of his species?

Recent Research on Hormonal Factors Relevant to Human Aggressiveness

David A. Hamburg

In regard to human aggressiveness, there seems little doubt among biologists that social factors play an enormously important role in the learning and expression of aggressive patterns. This does not exclude the possibility that underlying biological processes may influence the ease of learning such patterns and some forms of their expression. Among the biological approaches, hormonal ones are particularly interesting because: there is a substantial tradition of research implicating male sex hormone in aggressive behavior of adult males in many mammalian species; recent work has extended such observations to primates, and has highlighted the role of long-term developmental processes in hormone-behavior relations; the emergence of biochemical techniques for precise, reliable measurement of hormones and related molecules offers improved opportunities for analyzing such problems.

Developmental Influences

Hormonal influence upon brain organization early in life has been shown to affect later aggressive and sexual behavior. The pioneering work in this area was done with rodents. For example, brief treatment of newborn female rats with male sex hormone, testosterone, results in lifelong abolition of female sex behavior and a tendency toward male patterns of aggressive behavior as well. Neonatally castrated male rats show female-like patterns of fighting behavior in a shock-induced experimental situation. Like females, they do not show increased fighting when testosterone is injected in adult life. However, late castration does not have this aggression-diminishing effect. Evidently, there is an early sensitive period in this species during which testosterone has a profound enduring effect on aggressiveness.

Research on the role of testosterone in the development of aggressive behavior has now been extended to primates. When testosterone is given in large doses to pregnant monkeys, spanning the second quarter of gestation, any female offspring that ensue are abnormal. These infant monkeys have some anatomical and behavioral characteristics of the male type. The social behavior of the untreated female offspring is like that already described for other normal females, but the behavior of the treated females much more closely resembles that of males. The masculinized female offspring threatens, initiates play and engages in rough-and-tumble play patterns more frequently than the controls. Like the normal males, these masculinized females also withdraw less often from the initiations, threats, and approaches of other monkeys. As adults, they continue to exhibit threatening behavior toward other monkeys, but the other aggressive characteristics diminish somewhat under the laboratory conditions employed so far.

Considering the extraordinary learning capacities that are characteristic of the human species, it seems unlikely that the early exposure of brain cells to male sex hormone would establish fixed, complex patterns of aggressive

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behavior for a lifetime. Rather, it seems likely that some more general orientation or temperamental inclination might be influenced by early male hormone, so that aggressive patterns are attractive and readily learned. The monkey experiments have recently been followed by an investigation of girls who had been exposed to androgens in utero, i.e., their developing brains in fetal life had come into contact with chemical compounds similar to the male sex hormone. A total of 22 such girls have been studied, mostly in the 10–12 year age range. The results indicated that the early androgenized girls, as contrasted with a control group, tended to be described by self and others as tomboys, to engage in outdoor sports requiring much energy and vigor, to prefer rough play, and to prefer toys ordinarily chosen by boys.

Experimental methods for analyzing the deployment of attention in the developing primate could be helpful in understanding the complex roots of aggressive behavior. An investigator raised monkeys in a total isolation chamber for the first 9 months of life, during which he exposed them to various types of visual input from colored slides. These slides depicted monkeys in various activities and also depicted various nonmonkey stimuli. Monkey pictures elicited much more interest than nonmonkey pictures. Moreover, pictures of monkeys threatening were especially potent in eliciting behavioral responses. Between 2½ and 4 months of age, threat pictures yielded a particularly high frequency of disturbance. These findings suggest that there is a period in early development during which the infant monkey is highly responsive to the threatening facial expression which is characteristic of the species. Through the processes of observational learning, which appear to be so important in primate development, it seems highly probable that once the infant monkey's attention is powerfully drawn to threat stimuli, he would rapidly go on to learn the conditions under which threat and attack patterns are likely to occur, and the behavior that is effective in terminating them.

Future research will determine whether exposure of the brain to testosterone in utero has a bearing on differentiation of circuits that will ultimately mediate response dispositions like those occurring to the threat stimulus in infancy. A high level of androgen secretion at an earlier point in life might affect the brain in such a way that the individual would be predisposed toward the development of aggressive behavior subsequently.

The possibility that variations in early androgen exposure might influence the interests or preferences of the growing child in respect to aggressive and sexual behavior is particularly intriguing because it would provide a crucial link between biological and psychosocial processes. In order to get this information in man, it would be helpful to determine the hormonal situation during pregnancy. In some countries it has been possible to utilize the circumstance of therapeutic abortion for important research on this problem. In Sweden, it has been possible to perfuse the fetus and get a dynamic picture of steroid metabolism in the early developing organism. In due course, it may well become possible to get a picture of fetal endocrine activity by measuring testosterone and its metabolites in the blood and urine of the mother throughout pregnancy.

Changes at puberty—In light of the evidence on testosterone's significance for the development of aggressive behavior in many vertebrate species, the question of puberty's hormonal effects

on behavior in primates is intriguing. The advent of precise, reliable biochemical methods for measuring minute quantities of testosterone provides much better opportunities for answering such questions than existed even a few years ago. The general tendency for isolation-reared monkeys is to be exceedingly fearful and prone to violence, both to self and others. This aggressiveness does not spontaneously decline with the passage of years after they are brought out of isolation. Indeed, there are some indications that these tendencies become further heightened with the passage of time. The time of these observations roughly coincides with puberty, and it is possible that the exacerbation observed may be related to increases in level of circulating androgens. Several species of nonhuman primates have been observed in recent field studies to have striking behavioral changes at adolescence, generally in the direction of one form or another.

Several recent reports are directly pertinent to the role of sex hormones in personality development in the adolescent and young adult human, and draw attention to the promotion of aggressiveness in adolescents, by androgen administration. Moreover, recent biochemical studies implicating dihydrotestosterone as the "biologically active form" of testosterone, accentuate the desirability of obtaining more detailed information about the various androgenic compounds present in the plasma of adolescents. Biochemical studies with the newer techniques show that there are sex differences in testosterone and androstenedione levels prior to puberty but there appears to be no remarkable increase in the levels of these androgens during the period from age 3 to 9. From age 9 on, boys show a gradual increase in testosterone levels.

Hormone Fluctuations and Changes in Behavior

Are any hormonal fluctuations associated with changes in aggressive behavior? Aggressive tendencies may vary in relation to hormonal fluctuations of reproductive cycles in mature organisms. In studies on the monkeys of the Puerto Rican colony, the frequency of aggressive behavior was found to fluctuate cyclically as a function of the colony's reproductive state. Males were wounded and died significantly more frequently during the mating season than at any other time of year. The data were interpreted to mean that during the mating season adult males experience high levels of androgens which are responsible for increases in the frequency of severe aggressive interactions. While this is a plausible interpretation, direct hormone assays were not made.

We have recently undertaken studies of the human menstrual cycle, seeking hormone-behavior correlations. It is clinically well known that fluctuations of mood frequently occur in correlation with the menstrual cycle. Typically the premenstruum is likely to be a phase of increased irritability and depression. Several studies have documented the disproportionately high rate of occurrence of various types of disturbance during the premenstrual and menstrual phases. Despite the rather extensive documentation of these relationships there has been little attempt to study the role of hormonal factors in their etiology. What is the incidence and severity of different symptoms in the menstrual, premenstrual, and intermenstrual phases of the menstrual cycles in a sample of relatively young married women? We undertook a

large-scale questionnaire study to obtain answers to this question. Six descriptive categories were utilized to provide a roughly quantitative estimate of severity. The questionnaire was mailed to all wives of graduate students at a large university. Approximately 1,100 replies were received after one followup letter. We found that 52 percent of these women reported marked irritability in the premenstrual phase of some menstrual cycles; 30 percent reported marked premenstrual irritability during their most recent cycle. In general they reported more premenstrual irritability than premenstrual tension, depression, or mood swings.

There is an interesting hormonal feature of the premenstrual reactions: They occur at a time of withdrawal of progesterone and estrogen from the circulation. Preovulatory plasma progesterone levels are extremely low; progesterone concentration is higher in the second half of the cycle. There is often an abrupt rise beginning about midcycle, and a rapid fall starting several days before the onset of menstruation. One line of inquiry in this area involves the concomitant measurement of progesterone and behavioral variables through the menstrual cycle centering attention particularly on the final week of the cycle, and utilizing comparisons of women who do and do not have severe premenstrual distress. Estrogen falls too, but not necessarily at the same rate as progesterone. In our research, we have not found progesterone levels or rate of fall to be correlated with overall distress, but possible relations to irritability have not yet been adequately analyzed. Moreover, we did not measure estrogens, and the estrogen-progesterone ratio may be important.

Clinical observations suggest that certain nonreproductive hormones may affect the probability of aggressive behavior in man. In Cushing's disease, in which there is excessive secretion of adrenocortical hormones and high circulating concentrations of these hormones, patients are often described as being easily aroused in anger. With successful treatment of the condition, this behavior tends to diminish. Similar observations have been made in patients who were given large doses of exogenous corticosteroids. The same statements apply to Grave's disease (hyperthyroidism) and to exogenously given thyroid hormone. With diminishing levels of thyroid hormone, irritability tends to diminish also.

Little is known of the endocrine concomitants of anger, threat, and attack in man. There are, however, clues involving steroid hormones and also biogenic amines, the latter occurring not only in the general circulation via secretion of the adrenal medulla, but also endogenously in the brain. Intake of commonly used drugs also affects brain amines. In experiments with human subjects, when persons participated in stressful interviews, the degree of anger elicited was significantly and linearly related to plasma cortisol concentrations. Other evidence showed that social differences may have a bearing on the anger-cortisol relation. If the expression of anger was socially approved and personally congenial, the tendency toward adrenocortical activation appeared to be less than when the expression of anger was not socially approved, was personally distressing, and when retaliation was anticipated. Since the latter conditions often prevail in human societies, the possibiltiy of chronic adrenal stimulation under conditions of chronic agonistic experience deserves additional investigation.

In investigations with a variety of

small mammalian species, involving both laboratory and field studies, evidence has emerged suggesting that as population density increases to high level, adrenal function tends to increase considerably and gonadal function tends to diminish; moreover, such increases in population density are, in many species, associated with a striking tendency toward aggressive behavior—either increases in amount of such behavior or the appearance of highly unusual forms of aggression. Crowding significantly enhances the toxicity of various sympathomimetic amines, especially amphetamine, in mice. Several sedatives and tranquilizing drugs afford protection to such grouped animals. Adrenergic blocking agents protect mice against the crowding effect. Investigations are under way to clarify the biochemical mechanism of such effects. Related research currently deals with metabolism of biogenic amines under several agonistic conditions in mice and rats. These conditions include aggregation, contact with strangers, and shock-induced fighting.

Biochemical Studies

These investigations lead us beyond strictly hormonal studies to hormone-related biochemistry of information processing in the nervous system, and into the broader field of human biochemical genetics. The Lesch-Nyhan syndrome is a disorder of purine metabolism in which overproduction of uric acid is accompanied by severe behavior disturbance including unusual aggressive manifestations. The disease is transmitted as an X-linked recessive trait, and a specific enzyme deficiency has been delineated. These patients have bouts of stereotyped self-mutilating behavior, resulting in serious damage to digits and lips. Bouts of attacking behavior frequently occur toward others in which they not only attack verbally but hit, bite, and break glasses. A woman carrying the gene for this disease can now be identified by an assay for the abnormal enzyme. Recently it has become possible to tap the amniotic fluid of such a pregnant mother and determine biochemically whether the fetus has the abnormal enzyme. If so, a therapeutic abortion can be done if all parties consent.

The purines involved in the Lesch-Nyhan syndrome have some similarity to environmental purines such as caffeine, the active ingredient of coffee, and theobromine, the active ingredient of tea. In current experiments, large doses of caffeine have induced self-mutilation by biting in rats. Similar results have been obtained with related compounds in rabbits and mice. This work opens up a range of research possibilities on the effects of various brain-stimulating purines on parameters of aggressive behavior, in that it provides a clinical-experimental model for the analysis of aggressive behavior in the framework of human biochemical genetics.

Thus, a widening range of biochemical studies—including endocrine, biochemical, genetic, evolutionary and neurophysiological approaches—is being brought to bear on problem of human aggressiveness. These biological sciences must ultimately work in conjunction with social sciences toward the deeper understanding of man.

Theories Of Violence: An Integrated Approach

JOHN P. SPIEGEL

There is considerable need for a more systematic approach to the theory and the concepts used to explain the occurrence of collective violence. The profusion of theories is currently tending toward the chaotic—a situation which is not helpful in determining what steps might be taken to reduce levels of collective violence. Nor does the present array of assumptions and explanations serve as a good guide to further research.

Types of Theories

The variety of theories currently on the market can be grouped under three headings. The first consists of "popular" or "nonscientific" theories, advanced by editorial writers, columnists, law enforcement officials, and some investigatory commissions. One such theory is the notion, proposed by the FBI, that the collective violence seen in urban riots is essentially meaningless—a simple breakdown in law and order. Another theory holds that riots consist of the actions of a minority of black people living in the ghetto. This theory further proposes that rioters consist of hoodlums and criminals plus a few disaffected or alienated slum dwellers. Moving further toward a socially determined explanation is the assumption that riots are caused by "outside agitators," "communists," or other unnamed "troublemakers." Another explanation postulated "contagion" as significant in the spread of rioting. The media have often been accused of stimulating contagion by showing inflammatory scenes of mob action to those who have not yet "caught the fever." Finally, urban crowding and the presumed tendency of crowds to behave irrationally can be grouped within the popular or common sense theories.

The problem with these popular theories is not that they are necessarily wrong or unscientific, though some of them have been disproved by recent research. The problems are (1) that they are assumed by their promoters to be so obviously true as not to require proof or disproof; (2) that they are one-sided, explaining a complex process by means of one or two simple variables; and (3) that they invariably picture the collective violence of urban rioting as a pathological or deviant phenomenon—as exceptional, irrational, criminal, or purposeless behavior.

The second category of theories includes those that have reached scientific status through the process of scholarly or empirical research. They can be placed in four groups. (1) One is based on the notion of absolute or relative deprivation. (2) Another is based on the collapse of rising expectations when promises remain unfulfilled. Both of these explanations are related to the frustration-aggression hypothesis, which has been confirmed by experimental procedures. (3) There are also theories based on the breakdown of shared norms and values incidental to large scale migration, industrialization, and other forms of rapid social change. Other theories are based on the theory of group conflict and conflict resolution. Conflict is seen as arising from the demand for and the resistance to social change.

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The greater the polarization between the two contending groups, the greater the likelihood of group violence.

The diversity of theoretical orientations, as well as their contradictions and implicit involvement in value judgments about the purpose and utility of violence inevitably evoke the question of whether it is possible at the present time to construct an integrated theory, one which takes into account most of the existing notions of explanation but relates them to each other in a consistent fashion without making premature value judgments as to whether (and what kind) of violence is good or bad. Unless the attempt is made, research, values, and opinion will continue to be mixed together to such a degree that it will remain difficult to decide whether proposed solutions are valid or will only make matters worse.

Integrating the Theories

One problem to which an integrated theory must pay attention is the contradiction between psychological theories which focus on the individual and political or sociological theories which focus upon groups, on the formation of movements, and parties to a conflict. It is important to select for our integrated theory a concept which correlates the motivations of the individual and the social system. We shall ask how it is that, given current conditions of conflict within our social system, black and white Americans come to adopt the role of "rioter," a person who engages in collective violence.

A social role is a goal-directed pattern or sequence of acts tailored in accordance with cultural values for the transactions a person may carry out in a social group or situation. Since most such transactions occur in harmonious situations, roles are designed for reciprocal behavior among role partners. For a variety of reasons, however, conflict, especially a conflict of interest based on incompatible values, may enter the role system. Arguments, threats of coercion, and actual coercions are then likely to disrupt the behavior of the role partners.

If social roles are organized in accordance with cultural values and if a breakdown of shared values is theoretically assumed to be a cause of collective violence, then clearly the first item in our integrated theory should concern itself with value orientations. Of the many value conflicts currently associated with the process of social change, we have chosen one value dimension as of key importance: the Relational Area. This area is concerned with group structure and decisionmaking. It is postulated that the ideal decisionmaking pattern places Individualism in the first order or most preferred position; Collaterality—horizontal consensus decisions—in the second place; and Lineal (hierarchical, authoritarian structures) in the last, or least-preferred position. Although this is the ideal rank order of values in which all Americans are trained to believe, many of our major American institutions operate in accordance with a discordant pattern of preferences—that is, with the Lineal rather than the Collateral in the second-order position. Thus, behind our Individualism there is an intense but largely concealed emphasis on superior-inferior relationships. The accent is on elitism and on power relations between groups rather than the pluralism or equality between groups as is called for by our national ethos.

Types of Strain

This ambiguity and conflict in

value choices produces two types of strains disruptive of harmony within the social system. The strong influence of Lineality sets working-class and lower-middle-class ethnic whites and working-class or poverty-stricken blacks at each other's throats as each tries to gain or preserve a foothold on the bottom of the ladder of opportunity.

The second type of strain is produced by the clash between the ideal value pattern and the actual or operative pattern. This inconsistency between political ideals and practice is perceived by many young persons, both white and black, as hypocritical. It is seen as a way of preserving exploitation and repression on the part of adult authorities who excuse their practices by constantly invoking their ideals, toward which, the authorities say, they are trying their best to move. The value conflicts are institutionalized and institutions can be changed only with the most extraordinary pain and effort.

Response Styles

If the prospects for social change are constrained within these value conflicts, then there are four logically possible responses, each of which forms the nucleus of a social role. The first three responses are to the operative Individual-Lineal-Collateral pattern while the fourth is in response to its conflict with the ideal Individual-Collateral-Lineal pattern. The first role response can be called "Nativist" and includes all those who react to any new group's effort to enter the mainstream system with resistance. The second role response includes all supporters of the status quo, whom we shall call the "Standpatters." The third role response includes those so committed to change that they are willing to make strong efforts to help new or previously excluded groups climb up the ladder of power, prestige, and opportunity. Such persons we shall call "Reconstructivists." Whereas Reconstructivists, both white and black, accept Lineality and ask merely that, in the current racial struggles, blacks be given a "piece of the action," the fourth role response group complains bitterly about a social system that makes it necessary to struggle so hard for a "piece of the action." We shall call this fourth role response the "Revolutionary."

Since all four of these role types feature behavior directed toward political goals while not yet formally connected with political parties or action groups, we may call them "parapolitical" roles. Such roles tend to be adopted or exhibited only as the occasion demands—in a political discussion, during an argument about racial affairs, in response to a local election, or in answer to a question asked in attitude surveys.

We can consider these parapolitical roles and their action-oriented derivatives as the second major item in our integrated theory. They are related to the conflict in values, but, on the other side of role formation and role adoption, they are related to three other factors which must be included in the integrated theory. One of these has to do with the personal motives for role adoption—a mainly psychological factor. We need to know about the mainly unconscious factors combined with personal experiences which are correlated with the adoption of a nonviolent, moderate position versus a radical, violence-prone position. It would be important to investigate the process of conversion from one position to another. This area, which can be called The Psychological Determinants of Role Adoption, will be considered the third major item in our integrated theory.

Demographic Factors and Interaction

The second factor is concerned with the social backgrounds and demographic factors correlated with role adoption. On the basis of common observation as well as specific researches we would expect to find more Nativists among Southerners and within older age groups, and more Reconstructivists in the industrial Northwest and among the young. Revolutionaries tend to be drawn from the children of middle class professionals who are also members of minority groups. A majority of blacks are Reconstructivists. These factors tell us a lot about the expected areas of recruitment into the parapolitical roles and about the potential strength of the corresponding group formations in various regions and locales. We shall call this, the fourth major item in our theory, the Social Determinants of Role Adoption.

The third factor correlated with role adoption has to do with the interaction, at national and local levels, between moderate and radical Nativists, Standpatters, Reconstructivists, and Revolutionaries. It is reasonable to assume that if the style of a particular city administration is largely and effectively Reconstructivist, the number of radical, black Reconstructivists will decline in favor of the moderates while the number of radical, white Standpatters and Nativists will increase at the expense of the moderates. Since the police are drawn largely from the ranks of potential Nativists in the South and Standpatters in the North their behavior toward black people, so often characterized by disrespect and harassment, can be expected to promote the recruitment of blacks into the radical Reconstructivist role.

These dynamic interrelations vary from city to city and yet we know little about such variation from systematic studies. Included in this area should be the kinds of communication about race relations provided by the local press, radio, and television; the policies of school boards, unions, and local industries; and the success or lack of success of civil rights organizations in pushing for Reconstructivist goals. Since the outcome of these interrelations is of the greatest importance to the polarization or defusion of conflict, we shall call this, the fifth major item in our theory, the Interactive Determinants of Role Adoption. It should be possible to devise assessment procedures in any city capable of determining at different points in time the proportions of moderate and radical Nativists, Standpatters, Reconstructivists, and Revolutionaries. In this way a graph of the state of conflict and change in the city could be constructed.

Induction into roles—If we use the designation "riot role" or "rioter," then we can ask what factors are conducive to the adoption of this role by an incumbent of one of the parapolitical roles. For this problem we may distinguish between the preparatory factors which are conducive to riot role adoption and the circumstantial conditions which actually manufacture riot roles during an outburst of civil disorders. Among those that should be considered are the following: (1) the levels of grievance, resentment, and anger among black and white incumbents of the parapolitical roles; (2) pattern-setting, or the images of other successful riots which provide scenarios of how the riot will go and of what roles are available, with what effects on the prospects of change and at what risk to the rioters; (3) formal and informal leadership, both among those groups who would promote a riot and among the "coun-

ter-rioters" who would seek to prevent the riot. We shall call this, the sixth major item in our theory, Factors Conducive to the Adoption of Riot Roles.

Riots and Their Manufacture

Finally, we must deal with the events of the riot itself. Beginning with the precipitating incident, roles are now in process of being manufactured through the interaction of city authorities, law enforcement personnel, and residents of the riot neighborhood, as the riot goes through various stages of escalation. Mutual and reciprocal acts of aggressive behavior is a standard aspect of any role expectations. Its avoidance requires not only self control, but confidence in nonviolent strategies for the resolution of conflict. Such strategies are extremely difficult to maintain in the emotionally heated atmosphere of the riot situation.

Another important circumstantial factor is concerned with the reporting of riot events both by the media and through informal networks of private communication. The media play a significant and sometimes unfortunate role in defining the riot situation for the public. Too often they have participated in the creation of myths which confuse the public and exacerbate the situation. However, it must be said that the concept of objectivity in reporting events is also a myth. It would be well for these sources of distortion to be understood by the general public so that allowances for bias and a skeptical attitude could more easily be maintained.

The Circumstantial Factors Conducive to the Adoption of Riot Roles represent the seventh and final major category in our integrated theory. In the context of our theory of the connection between role conflict and social change, the question of why the riot takes place subsides in importance. Explanations of the riot are not so relevant as the possibility of discovering what effect collective violence has had on the prospects for social change. In terms of our theory, this means discovering the proportionate redistribution and location of parapolitical roles in the community and assessing the substantive changes in institutions following the riot.

Collective violence may be regarded as a social experiment—an experiment which has had some notable successes and failures in the past. What attitude one adopts toward such experiments is a personal value judgment that cannot be derived from research procedures. What science can possibly do, as we have attempted to demonstrate here, is to set forth the factors which should be taken into consideration in reaching such a value judgment.

The Neurological Basis of Violence

José M. R. Delgado

While it is obvious that sensory stimuli from the environment provoke violence, I would like to draw attention to the other essential (and usually neglected) component within man himself: the neurological basis of aggressive behavior. The evaluation of human circumstances precedes every behavioral response, whether apathy, cooperation, or rebellion, and the processing of stimuli takes place within the functioning brain.

Human aggressiveness is a behavioral response characterized by the exercise of force in an attempt to inflict injury or damage to persons or property. The phenomenon may be analyzed in its three components: environmental factors acting upon the individual, reception of information through sensory pathways and its interpretation by cerebral mechanisms, and performance of responses which constitute observable violence.

Social sciences are rapidly developing partly due to increasing public concern about juvenile violence, educational problems and general social unrest. Interpersonal and intergroup relations are investigated with reference to such dimensions as emotions, economics, culture, and working conditions; all behavioral interactions, however, depend on intracerebral activities, which are usually excluded from social studies. Both neuropsycho-behavioral and social sciences are active areas of research, but their present rate of growth is too slow and their objectives too limited to improve significantly our unbalanced civilization.

Although learning has detectable electrical correlates in the brain and emotional behavior may be controlled by cerebral radio stimulation, these and similar facts may seem rather distant from the problems created by acts of violence. We must realize, however, that the potential of new fields should be evaluated in terms of newly discovered principles and their possible applications. Information about cerebral mechanisms which can trigger or inhibit violent reactions may be decisive for our survival, and technology is already available to undertake this task. We need only the dedication of more intellectual and economic resources to carry out the research. Even now, some information is available about the intracerebral mechanisms of violence, and it should be taught to both educators and students. While intracerebral mechanisms are initially structured by genetic endowment, they are decisively molded by early experience. When the interaction between brain physiology and experience is widely recognized and understood, we may learn to take more active direction in filtering, encouraging, or rejecting stimuli in our environment.

Predation, basic needs, and violence —Scientists in many disciplines have reviewed the zoological scale in search of ancestral determinants of man's aggressive tendencies. Their consensus is that animals in the wild do not fight to kill members of their own species, but do exhibit aggression at mating time and when the territory required for their feeding and sleeping

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needs is challenged. Our closest relatives, the monkeys and apes, maintain a hierarchical group organization with threatening gestures, verbal scolding and submissive acts, and some species are known to separate sparring young males. Blood is seldom drawn in intraspecies struggles, while it is usually shed in other types of confrontations. Predatory behavior is considered alimentary activity, for the drive to obtain food does not entail anger or ferocity. The fulfillment of basic needs such as gaining proper space for family living or food supply, winning of a mate and establishment of social rank within a group are normal activities of individual development. But these must be distinguished from acts of violence which involve willful destruction of life or property without the direct fulfillment of a basic personal need and are contrary to the general social welfare. Differentiation between "physiological aggression" and "antisocial violence" is clear in most cases, although the moral evaluation is sometimes debatable. A race riot may be interpreted as a natural expression of grievances and beneficial to the rioting group, while it is considered reprehensible antisocial behavior by the dominant class. In any event, aggression and violence depend on factors which may be identified and evaluated.

Genetic inheritance—While animal behavior derives from genetic inheritance and the physical environment, human behavior is molded primarily by a third and unique factor: cultural environment. The question has been asked whether there is a "killer instinct" in man, an animalistic tendency derived from the long struggle for survival, printed irrevocably in our genes. Scientists disagree on this matter, some insisting that we are uncontrollable beasts, others maintaining that we are basically harmless creatures. Geneticists believe that genetic inheritance does not set the behavioral pattern for man's life, but that it does make development of different traits more probable. The fact is that teaching is more effective than selective breeding for promoting behavioral change. At conception, all people may be equipotential; from that moment on the physical and cultural environment change man.

In 50–75 percent of cases, a child exhibits approximately the same intelligence his parents show. In practical terms this means that, given the same environment, he reacts about as efficiently as his parents. However, intellectual capacity and other characteristics can be altered according to cultural influences, and stimuli which provoke anger and violence in one society may be neutral for members of other groups. While genetic selection is decisive for our physical formation, our mental and emotional development depend on the environment for nourishment.

Physical environment—For man as well as animals, physical surroundings are critical for survival and normal development. Diet deficiencies are responsible for millions of deaths annually and cause irreparable brain damage in countless surviving infants. Overcrowding introduces an element of stress which is not conducive to normal growth. Man's need for food and space can lead him to perform acts of antisocial violence including robbery and murder.

Social environment—Violence is a product of cultural environment and is an extreme form of aggression, distinct from the modes of self-expression required for survival and development under normal conditions. Man may react to unpleasant or painful stimuli with violence, but only if he has been

taught by his culture to react in this manner. A child can learn to react to frustration with equanimity or aggression. A major role of education is to instill self-control in individuals so that they will not over-react in the face of threats and pressures. We should remember that the most basic instincts can be redirected, and the distinctly human quality or cerebralization of behavior is possible through education.

In short, nothing in man's genes forces him to commit murder. We are suffering from the effects of an environment which has channeled our potentially positive, aggressive, and competitive energy into destructive violence; also we are facing formidable ideological conflicts. Fortunately, modern technology has provided us not only with the means to destroy ourselves but also with the means to discover and influence the mechanisms of violence within the brain.

Violence in the brain—It would be naive to try to understand the reasons for a riot by recording the cerebral electrical activity of the participants, but it would be equally naive to ignore the fact that each participant has a brain and that determined neuronal constellations are reacting to sensory inputs subsequently producing the behavioral expression of violence. Both neurophysical and environmental factors must be evaluated, and methodology is available for their combined study. Experimental investigation of the cerebral structures responsible for aggressive behavior is an essential counterpart to social studies.

New experimentation has established that we can investigate brain mechanisms responsible for the onset, development, and maintenance of specific mental functions, and that we can influence the genetic, environmental, and intracerebral levels in order to substitute, at least in part, human intelligence for natural change in the formation and education of individual mental activities.

By means of electrical stimulation of the brain we can alter its activity in many ways. We can effect the release of ideokinetic formulae stored in the neurons and activate motor fragments of aggression performed without purpose, awareness, or adaptability. In other experiments, brain stimulation may produce a painful sensation that enrages the animal and elicits a violent response. Brain stimulation can also evoke behavior which is not just a fragment of violence or a reaction to discomfort but is a complete and purposefully directed act. The emotional potential can be evoked artificially, but it is always expressed according to the subject's previous experience and evaluation of his present environment. These facts show the decisive role of education in molding personality.

Scientific advances have proved that mental functions and human behavior can be modified by surgery, by electronics, and by chemistry, thus placing the mind within experimental reach. The ability to influence mental activity by direct manipulation of cerebral structures is novel in the history of man, and present objectives are not only to increase our understanding of the neurophysical basis of mind but also to influence cerebral mechanisms by means of instrumental manipulation.

The working hypotheses may be summarized as follows: (a) there are basic mechanisms in the brain responsible for all mental activities; (b) these mechanisms may be detected, analyzed, influenced and in some instances substituted by means of physical and chemical technology; (c) predictable behavioral and mental responses can be evoked by direct manip-

ulation of specific brain areas; (d) we can substitute intelligent and purposeful determination of neuronal functions for blind, automatic responses.

Psychogenesis in the school curriculum—Liberation from and domination of the environment was possible when we discovered the laws of Nature and directed them with our intelligence. In a similar way, we cannot ignore the biological laws of the mind. We should use our brains to direct our behavior rather than to accept its determination by unknown forces. Through education we should provide awareness of the elements, including intracerebral mechanisms, which intervene in the formation of personal identity, and we should teach the processes of decisionmaking and choice. Freedom requires the recognition of biological drives and their intelligent direction, and individual freedom will increase when we understand how personality is set in early childhood and when we develop means for evaluating and interpreting information from our surroundings. For this purpose, a course on psychogenesis, based on latest information about the physiology, psychology, and biochemistry of personality formation, should be available to parents, educators, and children.

In agreement with our experimental findings, the postulates of psychogenesis are:

The mind does not exist at the moment of birth.

The mind cannot appear in the absence of sensory inputs.

Individual identity and personal behavior are acquired functions which must be learned.

Violence is a pattern of behavioral response related to the function of specific areas of the brain.

The purpose of education is the creation and genesis of individual mental functions.

Symbols from the environment will be physically integrated within the brain as molecular changes in the neuronal structure.

Man is not born free but is subservient to genes and education.

Personal freedom is not inherent; it is one of the highest goals of civilization.

Neither authoritarianism nor permissiveness is desirable in education. It is preferable to direct mental and behavioral development toward self-determination of goals, knowing that if we want to create free indivduals, we must teach them to be so.

The human being is a functional trinity of sensory inputs and behavioral responses connected by the essential link of intracerebral processes. The three aspects are equally essential, even if, in the past, only the first two were considered important while the secrets of the brain remained an unreachable mystery. We have begun to unravel those secrets, and a new perspective for knowing man is emerging from scientific explorations.

When Warring Groups Meet: The Use of a Group Approach in Police-Black Community Relations

Edward B. Klein, Claudewell S. Thomas, and
Elizabeth C. Bellis

In the summer of 1968 a sensitivity training program was held involving members of two "warring" groups—the police and the black community—at a time of racial crisis in the community and the Nation at large. Included in the exercise were community leaders and residents, the local police chief and members of his department, and professionals ranging from anti-poverty workers to ministers, lawyers, psychologists, and psychiatrists. The professionals, acting as group leaders in the sensitivity exercise, helped the police and black community to come together, share experiences, test out new behavior, and, in general, explore issues and feelings in what was thought to be a relatively "safe" environment. Partially successful, the exercise was nevertheless disturbing to all of the participants and raises questions about this type of intervention. The sensitivity exercise was one attempt to reduce the high level of tension between these two groups who are so centrally involved in the drama of urban America. At some risk, "experts" participated in a situation over which they had little control. They accepted the definition of the situation that was imposed by others (police and community) in order to facilitate a dialogue between facts that are warring.

The exercise took place against the background of a summer racial disturbance. The police chief and a number of health and poverty specialists met to explore ways of improving police-community relations. The health professionals suggested that group sensitivity training between members of the black and Puerto Rican communities and the Police Department would be the most effective way to facilitate communication, understanding, exploration of attitudes, and possibly behavior change. The original design called for small groups composed of six police officers and an equal number of community people who would meet with a trained leader and discuss feelings and perceptions about each other's behavior, with the hope that, over a period of time, stereotypes would decrease and a more realistic view would emerge. Better intergroup relations might then carry over into the wider community setting. The group leader was to clarify goals, interpret group dynamics and suggest various techniques for helping the group to perform its task. The police chief could only allot 4 hours a week to each officer for the sensitivity training. There was a spirit of real cooperation to the point that community participants were to be included in the planning and paid for their participation. The agreed-upon schedule called for two 90-minute sessions on Monday and Tuesday and an hour wrap-up on Wednesday for each group. Thus, conducting four separate groups a week, with six policemen and six citizens in each group, a total of 120 officers and an equal number of citizens could complete the training experience in 5 weeks.

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Community leaders backed the program as one of great promise. One person from each of the seven ghetto areas became involved in the planning and implementation of the program. They were to negotiate the details of the program with the police, help select group leaders, recruit participants, and follow through on the total program.

The criteria for trainer selection were community acceptability, some group experience, and police agreement. The community leaders and the police were separately to recruit and orient their own participants in terms of the group rules and general purposes of the program. The police and the professionals raised funds for payment of community participants, including transportation and babysitting expenses for the women.

We thought all parties understood that members in the exercise would not be penalized for speaking up, that police would not wear guns, and that any and all forms of verbal interactions would be tolerated in order to make the encounter as meaningful as possible. These understandings were never formally agreed to in writing by all parties, nor did the group members see any statement of understanding in advance of participation.

The number of participants should have been 48 (24 officers and 24 citizens) on any one day. The police came in fewer numbers than agreed upon (15) while the community response varied from less than 15 to over 35 people per day. As a result, the trainers changed the design to three group meetings a week, following a spaced Monday, Wednesday, and Friday schedule to allow for a "cooling off period" between sessions and for greater staff perspective. Three review sessions were held on alternate days so that the trainers and the coordinator could go over the group dynamics, progress, and difficulties and gain some overview of the total program.

In the first week, as in most groups of strangers there was initial doubt and distrust, heightened by anger in this group, an inability to hear others and a focus on "war stories" or events outside of the room. Both community and police could ventilate anger on other "racist cops" but not on those in the room, on "wild kids," but not on "your" children. There was a need to communicate, have a common ground and locate the enemy elsewhere. For both community and police participants this seemed related to their ambivalent feelings about authority. The majority of both groups are lower class in origin; over the week they tended to move together and to reject the "bad" outside world. In a way, this was necessary to keep the commitment to the program going, given the pressures on both from outside reference groups—the station house and the streets of the community.

The group exercises in the second week showed similar dynamics to those of the first week, despite the fact that the militants had left, truncating the political spectrum. Middle class black males now attempted to play the role of the militants, as if to restore the original spectrum of the group and thus its credibility. Policemen, in general, began to question the credentials and credibility of the new "militants" and played a more active role. The decreased credibility of the militant role led participants to seek meaning from within themselves and their own training group.

During the 3rd week, the authors, as well as a number of trainers, left to fulfill other commitments. A new coordinator, a white psychiatrist, took over the supervision of the group lead-

ers. One white trainer stayed but the new cadre of leaders who were recruited were all black males. With the changes and delays, the sense of optimism and certainty of purpose that had pervaded the exercise during the first 2 weeks was gradually being eroded.

At the opening session of the 5th week, one group, drawing to a close, was startled by the interruption of a policeman who was not a participant. He had come to pick up his fellow officers and return them to the Station House but chose to enter the group even though he was wearing his gun. A young black man in that group who had just been released from police custody a few hours before swore at the policeman; the officer attempted to arrest him. The group persuaded the officer to back down. But the boundaries of the exercise were shattered by this incident. Rather than allow external forces to extinguish the experiment, community and group leaders met together and voted to end the training after one more session to bring about closure. No longer able to assure the group members that guns would not be worn, that arrests would not be made, that frank discussion was safe, we sought at least a final "decompression" session. The numerous political undercurrents crystalized on Wednesday and the encounter was chaotic, violent, and frustrating for all involved. Blacks occupied the church where the meeting was to be held, leaving police who were to be in the group clustered on the street, unable to enter the building. Epithets were freely exchanged in an atmosphere growing progressively more tense. A phone call from the police led a ranking officer to appear within minutes. He gave the order for his men to withdraw. Upon this note the exercise ended.

Only in retrospect did we discern the logic of events that was heralded by the militant pullout in the 1st week. Apparently, the very process of setting up the exercise, with its powerful backing by the new chief of police, the fact that the exercise came into being, that police had to participate, and that militants were willing to show up carried assurance to the chief protagonists that there would be no all-out war on the streets that summer. The militants, who felt no desire to understand and sensitize themselves to a group they consider their real enemy, were then free to leave. The police, of course, had to remain. All of this had to do with the unspoken agenda—keeping the summer cool. This agenda was perfectly clear to the militant police and blacks; completing it, they were free to conceive of other time tables, other modes of action. For them, the exercise had been the testing device for intentions, not an ongoing experiment in group interaction.

The professionals, too, had known the hidden agenda that gave urgency and mission. Their attention focused on the exercise as a demonstration of how social change could come about peacefully, although it was never labeled in those large terms. A large number of policemen and community residents in the exercise and audiences on the outside shared the sense of urgency, unaware that the real business had been transacted during the 1st week. Within the groups, individuals worked hard at the group tasks and all indications were that police and community residents were, indeed, beginning to see each other as individuals, to view sympathetically each other's problems, to find some things in common, to use the group productively. But the social and political context within which the exercise operated was destructive to just this

sort of coming together. What the real protagonists had wanted was a "truce," not a new beginning, and so there was a series of testing, provocative moves, which resulted finally in calling off the exercise.

With some distance from the exercise, we were able to evaluate its positive aspects. The community did, in fact, learn something about how law is enforced, how police work, and what such things as "laying hands on" mean. There was a growing awareness of some of the fears held by the policemen going into a ghetto area. The police began to learn how the black communities perceive them and how these communities live, think, and feel.

Black leadership of interracial groups may be an important technique for allowing members to experience a reversal of the usual black-white power relationship. The perception of the powerful leader can change the attitudes of the participants so as to allow more equal power distribution between the two groups. The attempted arrest might not have been made in a black leader's group. The necessity of changing the nature of what is being communicated indicates a need to have both groups consider the possibility of a shift in power. This change may be most easily accomplished in groups through the person of the leader. This reflects the central role of leadership, which was demonstrated in this exercise, for example, by the lawyer-run group, which discussed legal aspects of police-community relations, the minister's group, which focused on moral issues, and the psychiatrist's group, which centered on the mental health area. Feedback during and after the program indicates that both police and community participants seemed to have gained greatly from dealing with competent blacks in leadership roles.

Following the program, the police department hired a full-time certified group trainer, and we received numerous requests for group training from leaders in the black community. In addition, the department started a police aide training program that is approximately 80 percent black in membership. These training interests no doubt were stimulated by the exercise, but they are limited to the two separate groups and do not involve them together. Our position was, and is, that having the community involved in inservice training is the one way of building a continuing community base into this and future programs involving the police department.

We learned more dramatically than we had with other groups the need for a better, clearer contract and for all participants to know more about it in advance. It may well be that no matter what boundaries are drawn, they will be permeated when "warring" groups meet—that an exercise that seeks to "wall" itself off will be clean, comfortable, and totally unrealistic.

We now recognize that mental health professionals are rarely called upon for active intervention in situations where antagonisms are real, built-in to the system, and fostered by that system and the protagonists. They are called only if each of the "warring" groups is not yet ready for a showdown or if another group fears a showdown. In the one event, the "warring" groups search for a truce; in the other, the mediator seeks unrealistically for change. The community mental health specialist may well be wary of how his skills will be used in such a situation.

Sexual and Aggressive Fantasies in Violent and Non-Violent Prison Inmates

BENJAMIN BEIT-HALLAHMI

This study was designed to answer the following questions: If the inhibition of aggression in habitually violent inmates is expressed in higher blood pressure, will it also be expressed in higher level of aggressive fantasies? Will the increase in aggressive fantasies be accompanied by a similar increase in sexual fantasies? Accordingly, it has been predicted that those violent offenders who are "well behaved" inside the prison would report and produce more aggressive and sexual fantasies compared to those violent offenders who run afoul of prison disciplinary regulations and to non-violent offenders without a disciplinary record.

A fantasy questionnaire (FQ) which included 136 items, divided into 17 scales, was developed. Only two scales, Sex and Aggression, were used in this study. An experimental TAT (ETAT) was also used. The set included five pictures, and the subject was instructed to tell a structured story in writing in response to each picture by answering the standard experimental TAT four questions. An initial group of ten pictures was presented to six male graduate students in psychology with the instructions to rank the pictures according to their sexual and aggressive arousal potential. They were also asked to select the two most "neutral" pictures. Five pictures were selected. One was classified as neutral (picture T), and one as High Sexual (picture B), one as Moderate Sexual (picture C), and one as High Aggressive (picture W) and one as Moderate Aggressive (picture A). The order in which the five pictures appeared in the ETAT booklet was randomized to control position effects.

The subjects were inmates at the State Prison of Southern Michigan (SPSM). They were under 50 years of age, with an IQ of at least 90. They had served at least two prison terms and they had served at least 18 months at SPSM. On the basis of the initial classification as violent or nonviolent from their past criminal history and the presence or absence of prison disciplinary reports, the subjects were classified into one of three groups: violent offenders with disciplinary reports (VV); violent offenders without disciplinary reports (VN); nonviolent offenders without disciplinary reports (NV). Sixty-five completed both the FQ and the ETAT. Those 65 were divided according to groups, as follows: Eleven white and 13 black subjects (group VV); ten white and 11 black subjects (group VN); eleven white and 19 black subjects (group NV).

The instruments were administered to the 65 subjects in four groups. In two of the groups the FQ was administered first and in the other two the ETAT was administered first. The instructions were read by the investigator, who was present in the room to answer additional questions and make sure that instructions were followed.

After reviewing the responses to picture T (neutral), it was realized that the picture served as a strong stimulus for achievement imagery but otherwise was truly neutral. Sexual

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imagery was found only in two cases, and aggressive imagery only in one. It was then decided to drop the responses to picture T from the analysis of results related to the hypotheses, and it was scored separately on Achievement. Responses to pictures A, W, B, and C were rated on a five-point scale for Sex and Aggression. Previous studies have shown that the length of a TAT story may affect its content rating considerably. To control for the effects of the story lengths on scores, a corrected score was created by dividing the raw score for each story by the number of words in the story.

The first hypothesis was that subjects who have a history of violent offenses but no record of disciplinary problems inside the prison (Group 2 or VN) will report more aggressive fantasies on the FQ, and will produce more aggressive fantasies on the ETAT compared to subjects in group 1 (VV), who have a history of both violent offenses and disciplinary problems, and to subjects in group 3 (NV), with nonviolent history and no disciplinary record. The second hypothesis was that the frequency of aggressive fantasies will be positively correlated with frequency of sexual fantasies, both on the FQ and the ETAT.

Hypothesis 1 tested the differences between VV and VN, assuming that the restraint showed by the VN subjects inside the prison will affect their responses to the FQ and the ETAT. The results on both instruments were in the predicted direction though not statistically significant. The failure to achieve clear-cut results is not too surprising. There is a great deal of diversity and contradictory results in the literature, related to the variety of instruments and populations.

We can only speculate as to the possible effects of the interaction and the differences between the two instruments in this study. On the FQ we presented the subjects with readymade themes, while on the ETAT he was asked to produce his own stories. There is a clear difference in the fantasy level: the ETAT is less structured and, compared to the FQ, closer to the internal "primary" fantasy. The FQ was more sensitive to long-term tendencies in actual behavior since the two more violent groups were higher on the FQ Aggression scale. The ETAT was more sensitive to long-term tendencies in fantasy, since the nonviolent group was higher on Aggression, compared to the other two groups combined.

Our second hypothesis was clearly supported. In addition to the positive correlations between Sex and Aggression measures on both the FQ and the ETAT, there was a "crossover" in terms of a greater likelihood that sexual imagery would be elicited on aggressive pictures, and aggressive imagery on sexual pictures. The only significant difference on a single score was on the Sex score to picture W, a clearly "aggressive" picture.

This positive correlation was not found between Sex and Aggression and the motive scored, Achievement. Thus, the results cannot be explained by the general drive level approach. If we assume a general expressiveness rather than a specific drive combination, we should expect a positive correlation with Achievement scores. What we have may be a bond between sex and aggression, the more "primitive" drives which, in turn, are unrelated to the expression of achievement, a social drive.

The Effects of Some Hallucinogens on Aggressiveness of Mice and Rats: Part I

W. Rewerski, W. Kostowski, T. Piechocki, and M. Rylski

In recent years the problem of pharmacological control of aggressiveness was investigated by numerous authors. Various psychotropic drugs influence various behavioral components of aggressive behavior and cause both inhibitory and excitatory action. The effect of hallucinogens on aggressiveness in animals is of particular interest, since some of these drugs are known to induce aggressiveness in normal animals and increase spontaneous aggressive behavior. However, hallucinogens when examined in triggered-aggressiveness tests showed an inhibitory action. The one exception is LSD, which acts in low doses as a stimulant of triggered aggressiveness while it shows an inhibitory action in higher ones. Other hallucinogens tend to decrease aggressiveness in all the dose levels. This paper reports studies on the action of LSD, mescaline, and 1-(1-phenylcyclohexylpiperidine) (Sernyl) on aggressiveness in mice and rats. To test the action of Sernyl was of particular interest, since this drug is known as an analgesic hallucinogen, and since other analgesics inhibit aggressive behavior in experimental animals.

Albino Swiss male mice were kept in single macrolon cages and fed a normal diet. The isolation time was both 14 and 28 days. To test the isolated mice, they were placed in groups of three for a contact time of 5 min. Drugs were injected intraperitoneally in a single dose, always at the same time. All drugs were dissolved in 0.9 percent NaCl; the volume of injections was 0.2 ml. Control groups received only saline. Aggressiveness was tested 45 min. after injections.

A slightly modified test of "muricide" or "killer" rats was used. Wistar male rats were kept in single cages and fed normal diets. Rats were isolated for 3 weeks and male mice were used as "victims." Drugs dissolved with saline were injected intraperitoneally in a volume of 0.3 ml. (controls received only saline). Animals were tested twice—30 and 120 min. after injection. The percentage of animals showing positive reaction was measured in the 1st and 5th min., and the test was scored as negative if the mouse was not killed after 5 min.

When time of isolation was prolonged from 14 to 28 days for the mice, the score of aggressiveness was increased but latency time was markedly reduced. The action of every drug used was quite different in animals isolated for the short and for the long period. LSD markedly decreased the score of aggressivity in animals isolated for 14 days but failed to change aggressiveness of animals isolated for 28 days. The latency time tended to be longer in LSD-treated animals as compared with controls, but in most cases these changes were not significant. Attacks after administration of LSD were weak and shorter than in control animals. Small doses of LSD increased vocalization of fighting animals.

Among the drugs used, mescaline was the most potent inhibitor of the aggressive behavior in mice. When given at the dose of 10 mg./kg. it markedly reduced the score of aggres-

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sivity. Doses of 50 mg./kg. blocked completely all the components of aggressive behavior.

Sernyl caused dramatic behavioral changes. Mice were hyper-reactive for external stimuli, were excited, and ran or jumped around the cage. Marked ataxia was also observed. The rate of respiration was markedly increased. These effects lasted for 20 to 25 min. Administration of high doses of Sernyl caused marked motor excitation and psychomotor-like epileptic seizures. In some animals, stereotypia was observed (such as sniffing and rhythmical horizontal movements of the head) and tremor. The aggressiveness was completely blocked in animals isolated for 14 days but only slightly, not significantly, decreased in animals isolated for a longer period of time. Higher doses of Sernyl, however, increased the aggressiveness. The score was significantly augmented and latency of first attack was reduced. This effect was less in animals isolated for the longer period.

The high dose of LSD showed a tendency to decrease the killing reaction of rats but this effect was not statistically significant. Mescaline slightly and insignificantly increased the number of positive reactions in the 1st min. of contact. No evident changes in general behavior were, however, observed after both LSD and mescaline. Sernyl, given at the dose of 5 mg./kg., showed a tendency to decrease killing responses in rats and increased the number of nonreacting animals. Animals showed slight sedation and their attacks against mice were short and, to some extent, hesitant.

Our results agree with the finding that high doses of LSD blocked the aggressive behavior of isolated mice. However, no increase of aggressivity in mice was observed after administration of smaller doses of LSD. Blocking effect of LSD depends on the time of isolation, since it was lacking in animals isolated for 28 days but not in animals isolated for 14 days. This phenomenon is difficult to explain and may indicate that during isolation the activity of the brain structures generating emotions and motivation is successively increased and that these structures are most resistant to LSD.

The results with mescaline confirm other findings showing an inhibition of aggressive behavior in isolated mice. The effects of high doses of this hallucinogen may be also related to its muscle-impairing activity. Sernyl caused opposite effects at low and high doses. Since this drug is known to possess an analgesic activity, we could suppose that this activity may be responsible for the decrease of aggressiveness in mice. However, higher doses of Sernyl increased the aggressiveness, and this phenomenon indicated that other components of action of this drug occur at this dose level. Among the drugs used, only LSD showed similar effects in both types of aggressive behavior analyzed in our studies. Thus, at some dose levels, LSD showed a tendency to decrease the killing responses in rats as well as to strongly reduce the aggressive behavior in isolated mice. Mescaline, however, being a strong inhibitor of aggressivity in mice, failed to reduce the killing responses in rats and even slightly increased the aggressive pattern. Also some differences were observed in both tests with Sernyl administered at the dose of 5 mg./kg.

The Relevance of Psychoactive Agents to Psychotherapy

DON R. LIPSITT

Psychoactive agents have now been on the psychiatric scene for about 15 years and psychiatrists continue to manifest ambivalence about their usefulness. Among some the advent of the drugs is alleged to have changed the whole character of large mental institutions, to have opened doors previously locked and barred, and to have made security rooms unnecessary. Others insist that the drugs are little or no better than placebos.

Drug use and bias—Some psychiatrists utilize drugs because they firmly believe that all mental illness is based on organic or biochemical malfunction; others completely avoid their use in the belief that emotional disturbance is the result only of interpersonal, intrapsychic conflict. Probably most psychiatrists lie somewhere between these extremes and share with their nonpsychiatrist colleagues similar attitudes about using drugs: Psychotherapy is too slow or doesn't work with some patients; patients apply pressure for the doctor to do something; frustration leads to a frantic search or a resignation to try anything.

Multiple meanings of drugs—By now psychoactive drugs are an accepted fact of therapeutic life; even so, much variation prevails in attitudes about their usefulness, application, and meaning in the therapeutic encounter. Therapists, like patients, ascribe a host of connotations to the use of drugs, and use of drugs sometimes stems from a negative judgment of the patient. They are usually called *adjunctive* rather than *integral* parts of the treatment process.

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It may be a sad commentary that the culture of "acid heads," "speed freaks," and "pot heads" has demonstrated better than most researchers that nondrug factors have a profound influence on the response to any ingested or injected agent. Such factors as setting, attitude, previous history with the drug, suggestibility, warmup or preparation before taking the drug, words of advice from others, and the nature of important relationships with others all have an impact on drug response. The non-drug factor least alluded to in the literature is the meaning of the drug to the drug taker.

Case Illustrations

Drugs become important to the patient in psychotherapy whether they are given or not. That is, the nongiving of medication by a psychiatrist has meaning which can help clarify conflicts and be interpreted to the patient.

Case 1—A 30-year-old married woman came to psychotherapy because of concern over her promiscuous extramarital activity. She was attractive, intelligent, articulate, and insightful. She initially appeared to be basically a hysterical character with masochistic features, but as treatment proceeded, she manifested characteristics of a more borderline state. She developed multiple somatizations and made frequent visits to other physicians requesting medication for headaches, fatigue, abdominal distress, weight loss, etc. Her father had been an alcoholic philanderer who deserted the family when she was about 7 and later died in a State hospital; the mother was a narcissistic man-chaser

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and regarded by the patient as a prostitute. Mother also drank and took pills for various ailments and tried to hide this from the patient as she was growing up.

The patient was being treated for headaches by a specialist, but when nothing helped, she made increasing demands on me for medication. The withheld pill was not only the deprivation by parents which made her physically and emotionally incomplete, but was also representative of withheld love. At other times in the therapy, medication was clearly imbued with her oedipal longings for father. It was also an identification with father as an alcoholic, who was destined for the "crazy house" (she equated taking of psychoactive drugs with proof of "craziness"), and with mother as an imbiber who also took medication for hypertension. When I finally did accede to her requests for medication, in an effort to consolidate her treatment, medications were of little help and served her purpose of expressing hostility toward her mother (and me) through displacement onto the medication. Her comment about "too little, and too late" was a replica of feelings toward mother who in old age now "tries to make it up to me for all those years she neglected me." Finally, receiving medication also had the significance of obtaining the forbidden object from father.

During a period when she was quite depressed, she asked for a consultation with someone who gave electroconvulsive shock therapy. I acceded and after her consultation she informed me that the consultant was much more friendly than I, that he called her by her first name, and had "no hesitation in giving medication" (the same that I had given her—which now helped her). This permitted some discussion of her apprehension about angry and affectionate feelings toward me and concern that mother would disapprove. It also permitted her to recognize that she had real affection and gratitude toward mother and therapist, as well as guilt over both her angry and affectionate feelings.

Case 2—In another case a 24-year-old male was seen after dropping out of school because of study blocks and generalized anxiety. He had an ambivalent relationship with a father who had divorced his mother when he was a teenager. The patient was bright, insightful, and made progress in treatment to the point where he was able to return to school, get married, and obtain a responsible job, after which he returned to graduate school to study psychology. In 2 years of weekly therapy he came to understand much about himself and his feelings toward his father, whom he saw as a tightwad, ungiving, and always urging the patient to be independent and to make his own way in spite of the fact that father could easily have helped him.

One day the patient appeared with a severe case of weeping bullous dermatitis caused by poison ivy. He had been to a health center where he was given calamine lotion but was clearly in misery from severe itching. After some initial hesitation and without any request from him, I suggested a drug that might offer him some relief, and gave him a prescription. He experienced dramatic relief, was extremely appreciative, and exhibited an intensification of positive transference feelings. It was possible in this context for him to realize effectively that he had regarded me as a father, that he worked hard in therapy to please me. His enthusiasm was then seen as a product of the realization that he could have a different kind of experience with me than he had had with

father—that I could give him something without being asked and without expecting anything in return.

Case 3—A patient who required steroids for a severe case of asthma adamantly refused medication. His physician felt he was merely being unrealistic and tended to badger him more and more. Psychiatric consultation revealed that the patient had always been of a suspicious and stubborn nature, and that he had on occasion experienced severe and frightening side effects from a drug given by a doctor that the patient had previously trusted. When this was elicited and understood, it was possible to discuss the drug's actions more fully with the patient, to reassure him about possible side effects of the medication, to enlist his participation, and then to start him on a dose of the drug to allow him to see for himself how he reacted before increasing the medication.

Case 4—A 34-year-old man who was being treated for esophageal spasm was given a tranquilizer by his physician for both its antianxiety and antinauseant properties. Also he was told that he need not worry about the safety of this medication since it was given to pregnant women to control vomiting. The patient failed to fill the prescription, stating that he did not need a "woman's medicine." What the physician had not taken into account was that part of this man's problem was a fear of being dependent, weak, and therefore "sissyish"—not a "real man." To have to take a medicine that women took only revived his deepest fears and confirmed that part of himself which he was stringently defending against. He substituted, on his own, wine for pills because that was what his (strong) father used as a sedative to sleep.

It should be emphasized that any medication used as part of the treatment relationship must be regarded as a crucial and integral part of the treatment process. One must acknowledge and look for the reverberating interaction between physiological effects of the drugs and the patient's psychological interpretations or misinterpretations of them. Before prescribing medications, there should be some consideration of how essential the drug actually is in the treatment process, what the patient's attitudes about previous experience with drugs have been, what knowledge he already has of drugs—either through personal experience or observations of others' experiences. It is important to make a character diagnosis, to know how patients deal with conflicts over dependency, control, aggression, sexuality, and it is important to know what it means to a patient to have to take medicine.

It would appear that psychiatrists trained in psychodynamic and medical approaches are best equipped to evaluate the relevance of drugs to psychotherapy. Psychotherapists working in a general hospital setting should especially consider it their province to study and understand the uses and abuses of pharmacologic agents as they influence all patients, since their nonpsychiatrist colleagues often turn to them for help in this area.

Methylphenidate Hallucinosis

ALEXANDER R. LUCAS and MORRIS WEISS

The widespread use of psychopharmacologic agents in disturbed children has brought with it the likelihood that new side effects will be reported with increased frequency. Methylphenidate hydrochloride is often prescribed for children with hyperactive behavior. Some children respond to methylphenidate with a remarkable diminution of hyperactivity. In others, there is no apparent clinical response. In most instances, side effects are absent or minimal; rarely, severe behavioral reactions may occur. We have observed gross behavioral changes with hallucinosis in two children and in one adolescent receiving methylphenidate. All three had symptoms characteristic of minimal brain dysfunction (hyperkinetic impulse disorder) for which the medication was prescribed.

In the first case, an episode of extreme excitement was followed by catatonic withdrawal, while the second and third cases represent drug-induced hallucinosis. In the first case, a total of 90 mg. of methylphenidate hydrochloride had been taken, plus a single 25-mg. dose of chlorpromazine hydrochloride on the 1st day. The most pronounced features of the reaction were extreme regression and withdrawal, which were associated with bizarre mannerisms. Hallucinations were not reported, but the behavior suggested that they were experienced.

The second child received a total of only 40 mg. of methylphenidate hydrochloride during a 5-day period. Due to the mother's absence, the drug was omitted on some of the days. On the afternoon of day 5, after the child had received two 10-mg. doses, a cycle of increasing stimulation, accompanied by a feeling of strength and power, occurred; this was followed by depression of activity and mood.

The third case represents a girl who had taken methylphenidate for 6 years without difficulty. Medication had been continued without medical supervision into adolescence. During a time of interpersonal stress, she took an excess of medication, believing that the pills would relax her. This case illustrates the hazard of self-medication and that of the continuance of methylphenidate after puberty. It is, generally, no longer indicated beyond puberty in hyperkinetic children and should be prescribed for adolescents only with full awareness of the possibility that it may be misused and that excessive stimulation may occur.

The use of central nervous system stimulants has long been recognized in pediatrics and child psychiatry. Used judiciously, they are among the safest drugs for preadolescent children. The possibility of certain adverse reactions, however, attests to the fact that they are not innocuous. Paranoid psychotic reactions in adults using large doses of amphetamines are now well known, and visual, auditory, and tactile hallucinations in an 8-year-old boy receiving therapeutic doses of dextroamphetamine have been reported. Most physicians are unaware that similar reactions can occur with methylphenidate. The most common side effect, anorexia, can generally be managed by dose adjustment.

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Visual-Motor Performance during Lithium Treatment—A Preliminary Report

Robert G. Demers and George R. Heninger

The efficacy of lithium salts as a prophylactic treatment of manic-depressive illness is now well established. Lithium treatment is not associated with tolerance, habituation, or withdrawal phenomenon, and gross alterations or normal cognitive, emotional, or motor function are not usually observed during lithium treatment. In an attempt to describe more accurately the alterations in mental functioning produced by lithium, we carried out an objective evaluation of visual-motor performance in six patients before, during, and after a period of lithium carbonate treatment.

The research design involved the repeated administration of three tests of visual-motor function to each of six patients before, during, and after a period of treatment with lithium carbonate. Since learning occurred with repeated administration of the tests, control subjects who received no lithium carbonate were tested in an identical fashion. Each patient and his control had an identical number and sequence of tests and interval of time between tests. Although the total number of testing sessions varied among the patients, they each had at least two test sessions before, three sessions during, and one session after the period of lithium carbonate treatment.

In order to assess the effects of the lithium carbonate treatment on the six patients as a group, we limited the data analysis to the six test sessions for each patient, which were categorized into the following six test periods: period 1, median 6 days before lithium carbonate treatment; period 2, median 3 days before lithium carbonate treatment; period 3, median 2 days on lithium carbonate treatment; period, 4 median 8 days on lithium carbonate treatment; period 5, median 18 days on lithium carbonate treatment; and period 6, median 4 days off lithium carbonate treatment.

The six patients studied had a history of manic-depressive illness and were voluntarily admitted to the research ward of a mental health center. Six employees of the center volunteered as matched controls for the patients. At the time of the study, patients number 1, 2, and 3 were mildly depressed, patients number 4 and 5 were normothymic, and patient 6 was hypomanic. All patients and controls were physically healthy and gave no history of neurologic illness. Patients received no psychotropic medications except lithium. The median daily oral dose of lithium carbonate ingested by the patients at test periods 3, 4, and 5 was 1.5 g. and 1.8 g. respectively. The control subjects received no medication.

We selected as the tests of visual-motor function the Bender Gestalt (BG) test, since it is a frequently used test and is sensitive to brain dysfunction produced by harmful substances or electroconvulsive therapy, and the digit symbol (DS) subtest of the Wechsler Adult Intelligence Scale (WAIS), since it is sensitive to hypnotic drug effects. At each test session the patient or control subject completed in sequence: (1) the DS subtest of the WAIS, (2) the BG test,

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and (3) a randomized DS test where the digit-symbol code of the WAIS was randomly mixed; thus the symbol for each digit was never the same as the WAIS or the same as before on any 2 days.

Lithium carbonate treatment produced an impairment of DS test performance but no change in BG test performance at the time that neuromuscular symptoms were present and serum lithium concentrations were within the therapeutic range (test periods 4 and 5). The patients improved in DS test performance, and neuromuscular symptoms decreased after lithium carbonate treatment was stopped. Lithium carbonate treatment did not significantly affect performance on the BG test, and mean scores of patients and controls did not significantly differ or change at any time throughout the study period.

Although clinically obvious cognitive deficits such as disorientation, memory loss, or confusion were not observed in these patients, their DS scores during the periods of therapeutic serum concentrations of lithium demonstrated not only a failure to improve, but also a decrease. To properly interpret this finding, a number of factors influencing DS test scores should be considered: patient motivation, visual acuity, muscular coordination, and cognitive processes. From the data in this study, it is not possible to state with certainty that lithium carbonate treatment produced a deficit in any single area. However, we observed that patient motivation was consistently high and there were no discernable difficulties with vision or coordination that would interfere with test performance. The defect appeared to be cognitive and was characterized by a slowness of integration of sensory input and motor response. It is interesting to note that when speed of performance is not measured, as in the BG test, no deficit in performance can be detected. We would, therefore, interpret the data as suggesting that therapeutic amounts of lithium carbonate significantly slow the rate of cerebral information processing. It would be of considerable interest if this is the mechanism by which the lithium ion produces a normalization of mood.

The nonrandomized and randomized DS tests did not differ with repeated testing of either patients or control subjects, and lithium carbonate treatment appeared to affect both tests equally. Thus, it is not possible to assess the effects of lithium carbonate treatment on learning in this study. Since DS test performance significantly decreased with increased serum lithium ion concentrations, it would appear that lithium affects DS test performance per se, and not just the rate of learning.

The average daily oral dose of lithium carbonate used in this study is about equal to the dose used for the acute treatment of manic excitement, but it is somewhat higher than the dose used in chronic prophylactic treatment of manic-depressive illness. It is possible that a reduction of the dose would also have resulted in improved DS test scores. The evaluation of this possibility is an important problem for future study since increasingly more patients are receiving chronic lithium carbonate therapy, and it may be an error to assume that this does not interfere with normal cognitive performance.

The Primary Mental Health Project: A New Way to Conceptualize and Deliver School Mental Health Service

Emory L. Cowen, Darwin Dorr, Louis D. Izzo, Angelo Madonia, and Mary Ann Trost

The Primary Mental Health Project (PMHP) has been in existence for more than a decade as an experimental demonstration program for early detection and prevention of ineffective school function. A major expansion of PMHP involves several school districts, 11 schools, hundreds of teachers and other school personnel, and thousands of children and parents. This report describes how the expansion came about, the nature of the new program, what we hope to learn from it, and problems we have encountered.

Initial Programs: 1958-1969

Our prior work can be divided into two substages. In the first, we developed methods for early identification of school dysfunction and mounted a skeletal program in early secondary prevention. A full-time school psychologist and school social worker were assigned to the primary grades of a single elementary school in Rochester, N.Y. Two demographically comparable control schools, with traditional mental health services that consisted of approximately 2½ professional days per week, provided a frame of reference for comparison. Judgments about early dysfunction were based on four sources of information: group psychological screening, social work interviews with first-grade mothers, classroom observation, and teacher reports. From these data a prognostic clinical judgment was formulated for each first-grade child. Subsequent methodological work clarified the determinants of the originally dichotomous clinical judgment and provided a basis for continuous ratings of school adaptation.

The initial prevention program used the school mental health professional as an educator, consultant, and resource person rather than as one who rendered traditional clinical services to children in acute current upheaval. Achievement, performance, and behavioral measures obtained from school records, teachers, and children demonstrated that after 3 program years, program children exceeded controls on a variety of adjustment and educational criteria. Thus, two major conclusions emerged from our initial work: (1) Ineffective school function can be detected early in the child's career and, unattended, will have serious, debilitating later consequences; and (2) significant positive effects of an across-the-board program in early secondary prevention can be demonstrated.

One serious limitation, however, was the lack of available resources for effective remediation and follow-through. Realistic appraisal of the professional manpower dilemma led to the conclusion that help for children would have to come from sources other than mental health professionals. We thus recruited and trained housewives, selected for their warmth, interest in children, and natural helping reflexes, to serve as aides with maladjusted school children. Necessarily, this decision recast the professional role even more sharply into the

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consultative-supervisory mould. In this program we emphasized heavily life experience and stylistic factors rather than trying to impart the cumulative knowledge of the helping professions. Aides worked half-time, which permitted regular interaction with children referred by teachers for acting out, undersocialization, and learning disability problems. Depending on their styles and the problems posed by specific children, aide activities have run the gamut from free play and expressive or recreational activities to talking, conversation, and direct educational functions. The housewife-aide program has been a model to stimulate other conceptually linked, child service programs in the schools that have made use of different helping personnel: retired people, college students, innercity mothers, and fourth graders. Aides are not merely expedient substitutes for professionals. Their warmth, ready adaptation to the schools, naturalness and spontaneity, and the challenge of the job for them combine to make them particularly effective as helping people with young maladjusted children.

The Current Program

Two factors were important in the development of the project from a demonstration format to a more widespread service system: (1) maintaining close communication and providing feedback to the host system, the Rochester City School District (RCSD); (2) rigorous research evaluation and the demonstration of program effectiveness. In the latter stages of the demonstration period, plans were advanced to expand PMHP to a number of RCSD schools and to introduce it in several neighboring county districts. This activity led to the following decisions: (1) to extend PMHP to several schools in a number of systems rather than focus it exclusively in one district; in this way, the project could be expanded in those systems where it proved viable; and (2) to cover a broad spectrum of settings with different constituencies, problems, personnel saturations, and training requirements in order to learn more about adaptations required under various conditions. Projected costs for the expanded project fell into the three major categories of program implementation and training, research and evaluation, and service. Owing to the lack of outside funds, the citizens' committee assumed leadership and raised sufficient local, voluntary funds to keep PMHP going during its initial year.

In its present expansion, PMHP is not a homogenous entity. While its subprograms share common goals, philosophical objectives, and ways to deploy personnel, specific implementation varies across settings because of different problems, orientations, and resources. The project embraces four school districts. It includes 11 schools with a total enrollment of 6,750 youngsters including 4,500 primary graders. In makeup they range from fairly affluent suburbia to an innercity ghetto school. The staffing pattern, which is structurally similar in all project schools, calls for portions of the time of a psychologist and a special worker plus aides for each pair of schools. Past experience suggested that the project would be strengthened if, before work-a-day operations began, a get-acquainted period were held where professionals could learn school needs and regularities and could become known to, and trusted by, school personnel. During a 6-month period professionals were able to prepare the schools, orient school personnel as needed, and set up appropriate referral systems, space

arrangements, and project mechanisms with consultative assistance from project staff.

Training professionals—Although the background of the 12 professionals varied, all were well trained and experienced. Virtually all of their previous experience, however, had been in traditional school mental health roles. Thus, the prime training goal was to develop alternative conceptualizations of problems, issues, and modes of delivery of school mental health services and to consider the "how-to-do-it" aspects of derivative programs. Strong emphasis was placed on early detection, prevention, and the recruiting, training, and supervising of nonprofessionals. Weekly training meetings with professionals were held for 6 months. A curriculum outline and suggested readings were provided and revised as indicated by periodic assessment of interest and needs. When the formal curriculum ended we continued to meet, less formally and less frequently (two to three times per month) for the remainder of the school year.

School professionals had the final say in the hiring of aides, since they were the ones who would be working daily with them. Candidates were given the roster of participating schools and were asked to rank-order their assignment preferences. The applicant pool was divided into approximately even subgroups available to each pair of schools. Professionals then interviewed their own candidates individually and selected the most suitable aides. Fifty-three aides were appointed for the 11 project schools.

Training nonprofessionals—Nonprofessional training was done primarily by the professionals, who had been given prior training, and knew their own strengths and what to emphasize. The training experience, in groups of 10 aides, had the potential to forge a common purpose and sense of direction among aides. Project staff, however, participated in the nonprofessional training. A training manual was prepared as a resource for professionals who had neither prior training experience nor clearly formulated ideas about what to include in it. The manual, which delineated areas of common focus and provided a tool for those who wanted specific training suggestions, was written for a series of 12 to 14 1½- to 2-hour training sessions to be held over a 2-month period.

Meeting the children—When field operations began, schools had generated ample slates of referrals. We had hoped that aides would start gradually, perhaps with two or three youngsters, so as to adapt to the new role without excessive external pressure. However, because the early surge of eagerness was great, within 2 weeks after the program started, 225 children were being seen by aides; within a month that figure was 330. In the 1st year of the programs operation, approximately 700 children, 15 percent of the primary grade enrollment of the participating schools, have been seen by child aides.

The pattern for seeing children has, understandably, varied in different settings as a function of identified needs and problems in children, aide style, professional orientation, and available resources. Preferences have varied for frequency of contacts and in the exclusive use of individual contacts vs. small groups. Teachers, principals, and other school personnel have been involved in aide contact and supervision in some, but not all, settings. Project staff have encouraged diverse patterns of seeing children and of aide supervision in the hope that

this will identify approaches that are best suited to specific settings and individual styles.

Problems

PMHP is an unwieldly administrative structure, an arm of four school districts and not a superordinate entity. Its functions involve its own staff, 12 mental health professionals, pupil personnel directors, superintendents, school board members, more than 100 teachers, scores of other school personnel, and thousands of children and parents. Given this number and diversity of affected parties, it has been impossible to communicate adequately. Understaffed settings breed special problems for professionals who work in them. Communication is poorer. Time demands for project activities eat up what little time is available and interfere with traditional role assignments that professionals carry simultaneously in other schools within their districts. Personnel in these other schools often react negatively to this, and in the absence of clear understanding of roles and responsibilities, additional pressures and brush-fires develop for the harried professional.

For all 12 psychologists and social workers, who had previously functioned in traditional school mental health roles, PMHP has required change in long-established, security-breeding modes of professional operation. Understandably, this has created problems for some—augmented, at times, because staff have not spelled out role-specifics in sufficient detail. Some professionals have found that they neither enjoy nor feel comfortable with essential project functions. As usual with experienced people, each team member has his own ideas, special competencies, preferred orientations, life style, personality makeup, professional background, and experience. Teachers and principals have their personal interpretations of PMHP, which often are shaped by perceived situational needs or educational philosophies. Some of these views put pressure on project personnel to make the program something that it neither is, nor can be.

Project emphasis on careful, comprehensive evaluation of its multiple facets creates additional problems. Unfortunately, some school personnel perceive a dichotomy between service and research and feel antipathy to the latter because it is seen as competing or interfering with educational service. Research staff must exercise constant close monitoring of data collection, full use of persuasive wiles, and provide early, clear feedback to respondents. Even so, there are instances in which data collection is thwarted and theoretically pristine experimental designs are muddled by missing data, sloppily or incompletely filled-out scales or forms, or other indications of reluctant respondents.

Our gravest concerns are about PMHP's long-range potential. The fiscal solvency of this, and many other, projects housed in educational settings is at best tenuous. We teeter currently on a delicate balance of voluntary and Federal monies. However viable PMHP's clinical and research findings prove it to be, its survival is uncertain. It still falls under the umbrella of "mental health"—a low priority category in most educational systems. Long-term prospects for dissemination of the PMHP model thus depend heavily not only on its effectiveness, but on the future of general educational support.

Father Availability and Academic Performance among Third-Grade Boys

Robert W. Blanchard and Henry B. Biller

It has been indicated by much previous research that father absence and/or lack of the father's involvement in the family can interfere with the boy's masculine development. A link between inadequate fathering and difficulties in intellectual functioning has also been suggested. Previous findings concerning the impact of father absence, and the quality of the father-son relationship on the boy's academic performance are provocative, but many potentially important factors have not been systematically considered. In this study, matched groups of early father-absent boys, late father-absent boys, father-present boys with low father availability, and father-present boys with high father availability were compared and, in general, it was predicted that degree of father availability would be positively related to academic achievement and to grades.

The subjects were 44 white, third-grade boys. They were divided into four groups of 11 subjects each: father absent before age 5, father absent after age 5, father present with low father availability, and father present with high father availability. Degree of father availability was assessed by means of maternal questionnaire data. There was an item pertaining to father absence and questions concerning how much time the father spent at home, at work, and engaged in various activities with the child. Father absence was due primarily to divorce and separation. The mean age of onset of father absence for the early father-absent group was 9 months, the mean length of father absence was 7 years 8 months. The mean age of onset of father absence for the late father-absent group was 5 years 4 months, the mean length of father absence was 2 years 10 months. The low father-present group had an average of less than 6 hours per week with their fathers, while the father-present, high father-availability group had an average of more than 2 hours daily with their fathers.

The individual subject matching was based upon the characteristics of the early father-absent group. The subjects were matched in terms of age, IQ, socioeconomic status, and presence or absence of male siblings by a team of three individuals who had no knowledge of the subjects' scores on the dependent variables. The subjects had a mean age of 9 years 4 months, a mean IQ of 102, and were from working-class and lower-middle-class backgrounds.

Each child in the third grade was administered the Stanford Achievement Test by his classroom teacher in the late spring. This test covers academic achievement in seven specific areas: paragraph meaning, word meaning, spelling, language usage, science and social studies, mathematical concepts, and mathematical problems. There are also total scores for verbal skills, quantitative skills, and overall grade equivalent. School grades in reading, language, arithmetic, and social studies were given numerical values, and a grade point average was computed. The teachers did not have the children's Stanford

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Achievement Test Scores available to them until after final classroom grades had been assigned.

In terms of most comparisons, the academic performance of the high father-present group was superior compared to the other three groups. In every comparison, the high father-present group performed at a significantly higher level than did the early father-absent group.

Grades, IQ, and achievement test scores were generally positively intercorrelated. However, there was a general lack of significant relationships between academic functioning and the following variables: age, socioeconomic status, sibling distribution, maternal availability, maternal employment, reason for father absence, and availability of stepfather. The lack of such relationships may have been due to interrelated factors: stringent matching procedures, restricted range of individual differences, and the small numbers of subjects involved in many of the comparisons.

Our findings are consistent with previous studies in which it has been suggested that the father absence or father unavailability can interfere with academic performance. It is interesting that only in the high father-present group was there a significant correlation between IQ and achievement test grade equivalent scores and between grades and IQ. Such findings may be interpreted as suggesting that, compared to boys from families where the father is absent or relatively unavailable, boys from high father-present families are most likely to actualize their intellectual potential.

It could be hypothesized that variation in academic achievement among boys differing in degree of father availability is largely a function of motivation. Highly available fathers seem to afford their sons models of perseverance and achievement motivation. The father provides his son an example of a male functioning outside of the home atmosphere. Frequent opportunity to observe and imitate his father seems to facilitate the development of the boy's overall instrumental competence.

It was not found that specific types of cognitive abilities or deficiencies were associated with membership in a particular father-availability group. However, it is relevant to point out the tendency for the late father-absent group to be less handicapped in mathematical functioning than the early father-absent and low father-present groups, and for the late father-absent group to generally perform slightly above the low father-present group; many of the boys in the late father-absent group may have had relatively positive father-son relationships during early childhood.

This study suggests that children who become father absent early in life are more handicapped than those who become father absent after the age of 5; although individual comparisons did not usually reveal large differences between the early and late father-absent groups, the late father-absent group scored higher in every case. Low father presence did not appear to have as disruptive an effect on academic performance as did early father absence, but the differences between the high father-present and low father-present boys are intriguing. The two father-present groups in the current study were different in terms of amount of father availability. Smaller differences in degree of father availability may not be important and the quality of the father-son relationship seems to have more impact on the boy's personality development than does the quantity of father-son interaction.

The Maid: Her Importance in Child Development

Lisbeth J. Sachs

The child psychiatrist of today studies not only the patient, but also scrutinizes the child's environment: the influence of his mother, father, and siblings on the patient's development. Occasionally consideration is also given to grandparents, aunts, and uncles, especially if they live in the same household. Less attention has been paid to the maid with whom a child may spend hours each day. The following case material demonstrates the role which the maid may take in shaping the character structure or neurotic symptomatology of children.

Case I—Ara, a bright 12-year-old girl, stormed into my office saying: "I told her [mother] to get me those boots. Or else . . ." "Or else?" I asked. "Or else the maid goes," she said. "I have fired many maids, only she [mother] does not know it. This one will go too." Ara's mother knew that many maids left because of the child's behavior, but Ara's mother did not realize that this was done for the purpose of hurting her. Ara, a schizophrenic child with tremendous hostility, expressed her sadism to her mother in her handling of the maids; they served mainly as a tool to hurt her mother.

Case II—Chester, almost 8 years old, was brought for treatment because he had been seen several times in front of a mirror wearing his mother's jewelry and her high-heeled shoes. He was a child who usually tried to please but occasionally broke into a temper. Of his father, he said: "He is either at work or asleep." His mother was ruler of the house. Her only contact with the children occurred when she disciplined them; otherwise she left their care completely to the maids. Since Chester's birth she had hired only French-speaking maids who knew no English. From the beginning of treatment Chester brought out a great deal of anger against the French maids. He remarked that they were stupid not to have learned English; it was frustrating for him not to understand them or not to be understood by them. My suggestion that he might be angry at his mother for hiring these French maids was met with a blank expression.

Chester progressed slowly in therapy. He remained unable to communicate with the French maids. He was of normal intelligence and in school did well in most subjects, but had a great deal of trouble with French. He was unable to learn even the simplest words or sentences. Chester now realized that it was his frustration in trying to communicate with the French maids that produced anger which, in turn, made it impossible for him to learn French. Finally, at the beginning of puberty (5th year of treatment) he permitted himself to realize that he was "furious at mother" for hiring these French maids and thereby introducing problems of communication. Later an obsessive thought of a knife and hurting himself with it appeared when his mother was pregnant. His knife obsession disappeared as he vented his anger at his mother in our sessions; but he did this only in terms of the unborn baby, condemning the mother's expected misdeeds,

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such as punishing and emotionally neglecting the baby.

One reason why this patient had to displace his aggression onto the maids may have been the magnitude of his hostility caused by his mother's threatening behavior. Another reason may have been that he did not dare risk a break with his only parent; his father, until Chester entered treatment, was nonexistent for the boy. And finally, this patient—an oedipal child—had both the desire to please and a guilt over his rage. As treatment of the family continued and his father began to take over while his mother assumed a more passive role, the boy was able to direct his aggression from the maids onto his mother.

Case III—Ellsworth was a precocious youngster whose mother was in treatment with me. Shortly before his third birthday the child told his mother that he wanted to marry her. It was 2 months after his birthday that I happened to see him when his mother brought him to her session. I asked Ellsworth what he wanted to be when he grew up, and his answer was "fire engine man and lawyer" (father's profession). To my question if he planned to marry, he responded affirmatively and said, "I'll marry Mommy." I asked him how his father would react to that, and he said softly, "We will share." The mother explained that she had introduced the concept of sharing: sharing his room with his baby brother, sharing toys, and sharing Mommy with the baby. I questioned him about what would happen if his father did not accept his idea of sharing mother. He said determinedly: "Then we have to get rough."

A few weeks later the mother reported that she had been playing with the two children with the maid present. Suddenly Ellsworth stated that he hated the maid, that he did not want her to undress or feed him, and that he wanted only his mother to care for him. The mother was perplexed, as he had always expressed strong positive feelings toward the young, pretty maid. The mother, trying to remedy the situation, approached the maid to explain the child's anger. The maid interrupted her laughingly: As soon as she had sat down in the kitchen, Ellsworth had run to her, crept into her lap, assured her that he was "only fooling," and had hugged and kissed her. A week later he told his mother that he might marry the maid. This statement came soon after his mother had told him that he could never marry her.

When Ellsworth was 4 years 8 months old, the mother asked for an appointment for him. The friendly, pretty, young maid had become pregnant and had told Ellsworth so. She also told him that she now intended to marry. The child became very upset. He could no longer fall asleep at night, and he demanded his mother's presence. He said he was afraid to fall asleep because he dreamed of monsters. During the day he was sullen, short-tempered, angry at the slightest provocation. He would often strike his parents and the maid, something he had never done before. He picked his nose so fiercely that it was swollen and red. He refused to go out to play with his friends. Television became his only diversion, but one of the parents had to sit with him while he sat in front of the TV. The parents were not allowed to step out of the room, let alone out of the house. Attempts by either parent to leave him were accompanied by scenes of begging, crying, and striking. He talked baby talk a great deal, something he had never done before. In the evening he played "baby."

When the mother brought Ellsworth

to my office, he appeared depressed and frightened; he was reluctant to leave his mother and enter my office. He chanted baby talk, and he leaned against his mother while pushing his finger forcefully into one nostril. I suggested that we play with toys. He immediately grabbed a baby bottle, sucked on it vehemently, talking baby talk, then picked up a baby doll and fed it with the bottle. He pushed the bottle into the doll's mouth. Then he stated that the baby is "an ugly baby, very, very ugly" and he dropped it hard on the floor. Then he took some toy soldiers and shot them with a gun. "I make statues out of them, I statuize them. No, I statuize only one, his name is Max." (Max was the name of the maid's fiance, a soldier.) Then he put his head and upper body onto the seat of a chair, thereby hiding his face: "I know a little boy who was very, very bad and they put him into prison and he died!" He appeared greatly upset and his voice trembled. Feeling that he needed reassurance, I told him that the little boy was not really bad, that all little boys sometimes have bad thoughts about grownups and babies. Ellsworth insisted that the little boy he knows "is very, very bad and has to die".

In a further attempt to alleviate his suffering, I said that little boys are never put into prison, that there is a law against it. "But this little boy ran away from prison and that's why he has to be killed." I argued again that he never could have been put into prison in the first place because he was only a little boy. The ensuing conversation showed that he did not accept my reassurance that nobody is killed for angry thoughts.

Two days before the wedding of the maid he told me his parents had decided that he should go to the wedding of Ninnie and Max. On the day of the wedding he confided to his mother: "I don't know if I will last through the wedding and the reception." In our first session after the wedding when I asked him about it, he responded by hitting me and telling me to keep my mouth shut. Then, nestling his face on my shoulder, he whispered: "I was dying, you know, I was dying."

At one of the following sessions, he entered my office smilingly, while pounding my abdomen gaily with his fist. He said: "Now listen, I don't want you to ask me about the angry man any more. Anyway, he was just made up by me, he was never real, just pretend, and he is gone for good." Ellsworth then took a baby doll out of the toy closet, fed it with a bottle, and stated: "We should play more with baby. You give me the baby and I'll wrap him in a towel and diaper him. Now he lies in a soft crib. I rock him. I hypnotize the baby. Will he stay asleep forever? Will he come out of it? How? I am the baby now!" He curled up in the big swivel chair. "I want to call my Ninnie to find out where she lives. I want to write her a letter tonight and tomorrow and the day after and the day after," he said smiling dreamily. Suddenly he jumped out of the chair, ran over to the toy soldiers and shouted: "Enough of the baby stuff, we still have a job to do, we have to fight the war in Vietnam. Max is in it, right in the middle of it. Bang, bang, bang, he gets hit." Banging the soldiers against each other, he stated, "There is a soldier, his name is Sachs, he protects Max so he would not die; all the others have to die, bang, bang, bang."

The second oedipal conflict involving the maid had been mastered; the latency child was reemerging. In the last session with me, he told me that he would be able to go to school

in the fall, all by himself, without his mother, while during his illness he had expressed great fear of school. The epic of his second conflict told by Ellsworth shows the victory of the superego over his instinctual desires; Ellsworth even acknowledges my part in it in the form of the "soldier Sachs."

The cases cited show different ways a child makes emotional use of a maid. I introduce the word "use" deliberately since the presence of a maid had a useful purpose in the child's emotional development. Ara, the schizophrenic girl, was an exception. While the maid as a dehumanized tool was useful to the patient in expressing her rage at her mother, she was not useful for the child's emotional development.

Chester, entangled in a negative oedipal conflict but nevertheless in the oedipal stage, had, before treatment began, the guilty need to turn his rage onto himself in the form of suicidal ideation and to prevent himself from learning French. The anger at noncommunication with a succession of "French-babbling maids" was only partly realistic. The maids served largely as a screen onto which he could displace his anger toward his mother. It was mainly the castrating mother, the absolute ruler of the house, who had produced the child's rage and, of course, his faulty sex identification. The importance of the French maids rested in the fact that the patient was able to vent his anger at them instead of at himself.

In Ellsworth, during the first observations of oedipal desires at age 3 involving both mother and father, we have too few productions for any definite conclusions. The concept of "sharing" was probably introduced too strongly and too early. Perhaps his mother was too forbidding and definite in declaring her unwillingness to marry him, so that he had to turn to the maid for love and abandon his mother as a love object. Ellsworth entered the first oedipal struggle at an early age, before he was 3 years old. The triangle was the classical one with father and mother involved, the maid at that time playing only a temporary role. The child then entered what appeared to be a phase of latency, which lasted for approximately 1½ years. At 4 years 8 months he entered a second oedipal conflict, and the triangle this time involved the maid and her fiance.

Ellsworth's parents claimed they had no knowledge of his romantic triangle with the maid and her lover. They were concerned, loving, and intelligent parents, and blamed themselves for the child's emotional disturbance. It is of interest to note that Ellsworth in the beginning of this second romance was severely depressed and guilt-ridden but at the same time showed anger. In sessions with me, the anger was gradually expressed. He emerged as the "sheriff," who only occasionally lapsed into the "deputy" who "does a few bad tricks," and then finally changed into the good man—a crime fighter. His "bad" thoughts were kept well under control so that at last he did not have to feel "so guilty."

In the cases described, the maid played an important role in furthering each child's maturation and in helping him resolve some of his oedipal conflicts. In this small sample the part the maid played was largely useful. The role of the maid, and mother substitutes in general, deserves further study from a psychoanalytic viewpoint. Such an investigation could have important implications for child-rearing and education as well as the organization of society and the ultimate role of the family.

Crazy Music: Theory

JOHANNA STEIN and SAMUEL V. THOMPSON

Some psychotic patients, although incapacitated for daily living, make music. In the course of musical activities, musical therapists have noted that patients sometimes persist in using notes which seem wrong or crazy, i.e., inappropriate to their musical contexts; but these notes are ascribed to randomly disorganized psychotic behavior. "Correct" music tends to be equated with sociable behavior; "incorrect" music with asocial or antisocial behavior. This study is concerned with psychotic patients' music as music. The effort was to observe and record inclusively and in detail musical structures chosen by such patients and to obtain patients' perceptions of them.

Procedure

Sixteen hospitalized psychotic adults in treatment were interviewed individually by a musician to find out how they chose and perceived orderings of notes in music. Some patients had more than elementary training in music, but the extent or nature of previous musical experience did not determine interview responses.

The interview—Each patient was asked questions about his taste in music in order to find out what organizing principles determined what was liked and disliked. Short samples of music were played on a phonograph and the patient was asked to describe them and to say what was good and bad about each. To insure that choices and perceptions were based on the music only, samples were presented without titles, and vocal samples were in languages the patient did not know. Patients were asked to hunt out a short melody of their own on the piano if possible, and to say what they liked or disliked about it; if they played some instrument they were asked to use that. If they could not make a melody of their own they were asked to edit an extant melody, i.e., to decide how such a melody should be performed. Voices were tested to determine natural range, weight, and placement of the singing and speaking tone, and patients were asked how they perceived the sound of their own voices, and if their voices had changed.

Theory

Although clinically severely ill, all patients interviewed were able to make methodical, purposeful, and replicable choices in music. Among each patient's choices were some which were not consistent with their musical contexts—the "wrong," "inappropriate," or "crazy" notes—and these notes were the special focus of study. They were found to resemble in style some other known kinds of music and were perceived by the patients to function similarly to defensively organized behavior in general. These idiosyncratic choices in music were in themselves consistent, stable, and predictable characteristics of an individual patient's music; patients perceived them to be not only appropriate but necessary. Patients' perceptions of the music of others (recorded music) in the same way resembled defensive misperceptions generally. The phenomenon, its defensive function, and its dis-

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tinctive musical structure led to a new conceptualization of patients' music, and eventually to a different clinical method.

Defensively structured music resembles music made by primitives. When notes conforming to two different esthetics—purely musical and primitive—are juxtaposed in an individual's musical production they sound inappropriate to each other, and some notes sound "wrong" or "crazy."

In a purely musical esthetic, music is an ordering in time of specifically but arbitrarily defined sounds. Music without title or words cannot express or communicate information or moods, and it is impossible to describe music except by specifying the sounds and their orderings. As music moves through time it can create and release musical tension in a limitless variety of patterns. These tensions are not directly expressive of emotions or moods, but they wax and wane in ways that can resemble the tension in emotive life. Thus, purely musical music can resemble the patterns of any and all emotions, and by analogy, musical patterns can be taken to mean or communicate patterns of emotionality. For deeply troubled patients who are often preoccupied with emotional events and emotionality to the exclusion of external reality considerations, music offers a medium of immediate and important salience. Musical patterns which resemble conflicting or forbidden patterns of emotionality can require of the individual immediate defense, most easily achieved by changing the threatening patterns. As soon as musical patterns are responded to as specific emotional patterns, so that they require restructuring for protection from resemblance to unbearable patterns of emotionality, their orderings are limited and constricted. Purely musical orderings are replaced by patterns of sound which resemble music made by primitive peoples.

Primitive people make music primarily to control magically a threatening universe. They impose on words unnatural sounds in order to make the words appear supernatural. Singers make themselves look inhuman, and they make themselves sound unnatural. The most powerful magic is attributed to repetition of the same little pattern over and over until the performer feels beside himself or carried away, when he is believed to have attained godlike power. The function of primitive music limits the variety of its structures, because sounds and their orderings are delineated by words. Each note of a chant is used for a syllable, and melody does not interfere with the words. Chants undulate around one or two central tones and are apt to trail off downward as the singer runs out of breath. Rhythms tend to be patters of sound as sung syllables are separated from each other by consonants, which stop the singer's tone. The words specify the function of the music, and musical patterns are added to words to wake them supernaturally powerful.

"Primitive" in music denotes music whose structure is logogenic, meaning that it is ordered according to some words and their subjective meanings. Patients' defensive restructurings of music were found tied to magical texts. They resembled early primitive music in characteristics such as repetition, limitation of melodic range, syllabic pattering, and taboos about certain patterns. The proportion of logogenic music to purely musical music varied from patient to patient, and probably relates somewhat to clinical degree of illness.

Clinical Examples

The following case samples illus-

trate the kinds of musical structures and perceptions on which the theory is based.

Case 1 (voice)—A male patient was asked to follow the piano up and down with his voice to test the range. He said that he had a four-octave range. Then he sang, very softly, his natural range of 2⅓ octaves, singing the lower and upper octave twice. The repeated octaves he perceived to be two continuous octaves. He was shown what he had actually sung, agreed with it, and said again that he had demonstrated his four octave range. He spoke in a choked monotone a little higher than his natural speaking pitch, and explained that he had created an artificial speaking tone to conceal the breaking of his voice during puberty. At first this tone was too low, and when his voice had finished changing it was too high, but it had kept the change a secret, and no one had heard his voice break. He said he would attack anyone who might notice something odd about his voice, and that he had beaten a teacher who commented on it.

Case 2 (perception of others' music)—A female patient listened to a soprano aria by Mozart in which a single melody was supported by simple orchestral chords and echoed by a chorus. She described it accurately and said that it represented everything good in music. When she listened to another excerpt from the same work, in which the same soprano was accompanied by the same orchestra on the same record, she interrupted to say that the music was bad and should be turned off because it was people quarreling. She distinguished as sharply between any music organized around one melodic line and any music in which two or more melodic lines occurred simultaneously, each having some degree of independent direction and motion (counterpoint). The more independence there was among simultaneous musical lines, the more severely she reacted.

Case 3 (composition)—This male patient spent much time playing on the piano the descending C major scale in fast one-octave glissandi. On arrival at each *c* he declaimed one of a small repertoire of special words beginning with the letter *c*, i.e., "Christian," "church," etc. At other times he chanted the spelling of his name over and over in a voice raised artificially from natural speaking pitch to a monotonous, constricted whine. Asked to sing, he shouted indignantly that he was singing, but nobody listened. The musician acknowledged the chant and wrote it down, and he stopped the chanting long enough to ask the musician to sing with him in order to make the chant more powerful. He alternated between chanting and playing throughout the interview and it was necessary to ask him questions whenever he stopped for breath. Later he interpolated some answers in his chant texts.

Interpretation

Many of the musical choices in the examples were organized to serve individual needs for magical defense and not to satisfy individual musical tastes; characteristics of the music of primitives abound. Specifically, Case 1, by repeating scales and chanting monotonously, achieved a bisexual superbeing who never breaks; Case 2 turned off counterpoint to prevent quarrels; and Case 3 chanted and played tirelessly to make himself powerful.

The structure of the defensive choices offers material for clinical inferences about these patients, inferences which are given some validity by the patients' explanations. One might infer that Case 1 is defending himself

by concealment and assumption of superpower against overwhelming feelings of vulnerability and fragility which he associates with adult male sexuality. Case 2 finds any interaction indiscriminately quarrelsome and defends herself by absolute withdrawal (turning off). When information about the use and perception of the singing and speaking voice, such as Case 1's, is added to information about the perception of recorded music, such as Case 2's, together with information about the spontaneous composing style, it is possible to make a useful clinical assessment of a patient's problem areas and defensive styles, and the assessment is especially salient where these interfere with verbal communication. Music, having no referents in reality, can offer such patients freedom to perceive and structure with whatever defensive restructuring the patient finds necessary, without fear of conflict arising from reality-testing; at the same time music can necessitate defensive restructuring, and the result has specific musical characteristics liable to differentiated clinical inference.

Some patients in this study who were midcourse in psychotherapy reported in the interview a change in musical taste in which some restrictive affective criteria had lost salience, and they then found themselves liking music which previously required defense. Music had not been mentioned in their therapy hours and the psychotherapist was not aware that the patient's taste in music was changing.

The usual music therapist with institutionalized patients deals with defensive musical behaviors by ignoring them on the assumption that they are based on lack of knowledge. The patient, encouraged to try music past what he thinks is his limit, may find out that the defense was not so necessary after all, especially when dispensing with it brings him interpersonal rewards. The approach derived from our theory of defensive musical reorganizations begins with the reorganizations themselves. Patients were musically dissatisfied with their defensive choices, even though they needed them, and the discrepancies between esthetically satisfactory music and defensive music were defined by a musician and set out in a series of structured problems. Esthetic dissatisfaction with defensive choices was often acute enough to motivate patients to work on these problems, and while they were actually working on them they required fewer symptomatic behaviors, even though extramusical behavior was not at issue. Gradually the verbal versions of their defensive choices began appearing in the patient's verbal productions elsewhere, especially in psychotherapy. Finally music in the patients' view became an autonomous analogy to emotive life, and the direct expression of the emotive life, however problematic it was, took place in verbal subjective contexts. At this point the musical treatment was complete, although the patient was still far from well, and verbal treatment was continuing. The goal of musical treatment was the emergence in spoken form of the defensive and problematic patterns which had governed musical choices, and the method was used to treat patients whose psychopathology impaired extensively the ability to talk about affective issues.

Detecting Creativity: Some Practical Approaches

Lewis E. Walkup

It is rather ironic that the pure scientist should have plenty of tests for creativity, while the applied scientist whose economic lifeblood is creativity in his associates has to fall back on common sense. In my work I have had to create ways to recognize creativity, to teach and cultivate it, and to establish a climate where it would thrive, all on a practical level. The following are some suggestions for practical tests of creativity which can be used in the hiring process.

As has been reported elsewhere, one of the best ways to ascertain the creativeness of an individual is simply to ask him if he is creative. Most people have a pretty good estimate of their own creative ability. Most men are quite honest about this point, especially if they realize that it will do them no good to get a job under false pretenses which will surely be found out later. But this test should not be relied on completely, because it might throw out valuable people who have not recognized their own creative potential.

One simple and practical test for creative ability is to find out how many patents the individual has, or how many articles he has written that contributed uniquely to an art. Even if he has no concrete results to show yet, the applicant may be of a creative habit of mind. It is a challenge to the interviewer to find out how the person thinks, and what his approach to a problem is likely to be. One method is to ask him to recall some of the experiments he has performed that impressed him as being particularly beautiful in some way. He may reveal a love of intellectual activity and a preference for problems over rote learning. Creative persons enjoy talking about the parts of a subject they *do not* know, while others prefer to talk about what they *do* know.

While you are trying to get to know the subject's thinking processes, you might attempt to learn how much he visualizes when he thinks about a problem. Creative individuals, at least in the fields of science and technology, apparently almost always have the gift of mentally reproducing, and using in their thinking processes visual images and other sensory equivalents of the real phenomena they are working on. Such sensory equivalents can be enormously complex and sophisticated, and sometimes appear to have almost the intensity of hallucinations. This power may be a valid criterion of creative ability.

What you are really after, however, is a feeling for the subject's basic mental orientation. People differ widely in the sorts of activity they like to perform and consider proper and interesting uses of their time and effort. Potentially creative people are likely to have a strong intellectual orientation. What is meant here by intellectual activity is a thought process in which the thinker adds something unique and personal to the material that is being processed by the brain. This kind of thinking is quite different from the simple storage and retrieval of information which, coupled with the expression of emotional likes and dislikes, makes up most of what the average person does with his mind.

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The presence and liking of intellectual activity in our sense may not be proof that the person is creative, but he must have this attribute to be productive in creating. The reason is simple: If his creativity is to be more than an occasional accident, he will have to do an enormous amount of highly complex thinking, and he simply will not do it unless he enjoys it.

This testing approach is easy to apply in an ordinary conversation on almost any topic. I remember pressing one candidate to talk about a problem of current interest, only to find that he kept quoting authorities on the subject and simply would not, or could not, tell what he himself thought, even though the topic did not require the insights of experts. There is a vast difference between the kind of thinking we are looking for, and the kind which can earn high IQ scores without creativity. The interview procedure can bring out this difference clearly.

A variation of this sort of interview testing is useful for finding out whether the applicant is creative in his particular field of work. It consists of presenting him with a relatively simple problem in his field but one which he is not likely to have met specifically or to have read about in the past; the interviewer can tell when the problem is new to a subject just by his reactions to it. The subject should understand that you are not looking for a specific "right answer" to your question, but possible approaches which might be used to solve it.

This problem-setting technique brings out a well-known characteristic of creative people: They are intellectually adventurous, and willing to attempt solutions even though the first attempts are far from the mark. The noncreative person is unable to use the principle that "quantity breeds quality." He may be as intelligent as the creative person according to formal tests, but he becomes hypnotized by the first idea he has and can see no farther; or he may be so concerned with being "right" that he will not take the risks which the creative person enjoys.

In another version of the interview test, we can use a person we already know to be creative to recognize creativity in our subject. In planning such an interview, one instructs the known-creative person to talk with the subject about his own problems, his embryonic inventions, his aspirations, and especially about the road blocks that are keeping him from solving some interesting problems. In such interviews, the new man is given plenty of time to advance his own ideas, to ask questions, and to think out loud on his own. If you can't pry the two men apart after 30 minutes, you can be pretty sure that you have found another creative person. But if the conversation dies out after a few minutes and your known-creative interviewer returns the subject to you before his time is up, you may be pretty sure that the new man is not creative. This is one of the most reliable ways to detect latent creativity. In such interviews it is not knowledge of the field that makes for rapport between the two people; it is the kind of thinking they do.

These methods were developed in practical situations to fill practical needs, and as such they do work. They are not intended as bases for quantitative tests, though numerical scales could probably be used for convenience in rating applicants on any of the factors.

Behavior Therapy in Retrospect: Patients' Feelings about their Behavior Therapies

VICTOR L. RYAN and MARTHA N. GIZYNSKI

The absence of a systematic and exhaustive examination of patients' feelings about their behavior therapies prompted this study, which hypothesized that many of the feelings and attitudes regularly observed in traditional, psychodynamic psychotherapy could be observed in behavior therapy as well, and could be found to be interrelated in much the same way. "Behavior therapy" was defined as any therapy deliberately and consciously emphasizing what are generally regarded as behavior modification techniques, and marked by a relatively ahistorical emphasis on observable behaviors. There are two parts to this study. Part 1 concerns retrospective evaluations by patients and therapists of psychodynamic psychotherapy. Part 2 is clinical in nature, offering the investigators' impressions of the behavior therapies and their outcomes as seen through the eyes of the patients and their therapists. The entire study was designed as a preliminary and exploratory investigation which would demonstrate the existence of a phenomenon and highlight possible areas for further investigation.

There were 14 subjects, all current or former patients in outpatient behavior therapy. They ranged in age from 16 to 46, in education from high school dropout to Ph.D., and across most socioeconomic strata. Their complaints included the usual problems with spouse and children, as well as specific difficulties usually associated with treatment by behavior modification principles. One woman would probably be diagnosed schizophrenic; the others would be classified mildly to moderately neurotic. They were seen for a median of 20 hours.

Recruitment was by means of advertisement in local newspapers and by letters from therapists to former patients who had been treated with behavior modification techniques. The therapists were encouraged to contact patients representing a wide range of outcomes, not just successful ones. All subjects were paid for their participation. The majority of the subjects had participated in some form of sociobehavioral therapy. The technique can be described as (a) defining the problematic behavior, (b) determining the controlling conditions, (c) specifying a behavioral change curriculum, (d) using techniques of change, and (e) monitoring of process and outcome. This kind of treatment was often combined with more conventional supportive casework techniques so that the overall results of this study may possibly not apply to single-technique, more rigorously controlled behavior therapies.

Potential subjects were first screened by telephone to eliminate those who had not been in some form of behavior therapy. Those remaining reported for an extensive, open-ended interview with one of the examiners. The examiners' emphasis was on the spontaneous expression of feelings and careful reporting of outcomes. The interview elicited information regarding previous history of psychological problems, previous treatment, circumstances of entering the behavior therapy,

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expectations, feelings and perceived therapists' feelings, techniques employed, and outcome. The subjects were asked to rate the degree of disturbance at the time of entering therapy; range of total life problems contracted for; confidence that the therapy would be successful; how much they liked their therapists, perceived them as competent, confident, persuasive, and how satisfied they felt their therapists were with the outcome of the therapy; how they felt about the specific behavior modification techniques; and general success of the therapy as well as success with the specific, presenting problems. These last two measures are referred to hereafter as "general" and "specific" outcome, respectively.

Immediately after the interview, the examiner, who had not seen subject's ratings, rated the severity of psychopathology at the time of entering treatment, general success, and success with the specific problems. The examiners also rated the degree to which behavior therapy techniques predominated in the therapy, that is, the relative balance or ratio of behavior therapy to other therapeutic techniques or emphases. Requests for further data and ratings were made of the five therapists who could be found. The therapists rated the severity of pathology at the beginning of treatment, range of total life problems contracted for, the degree to which they had deliberately fostered positive expectations on the patient's part, how much they liked the patient, and the two outcome measures.

Part 1

From all vantage points, specific problems were rated as having improved more. The therapists rated cases most improved; patients next; and examiners least. The choice of rater has important implications for assessing outcome. The subjects and examiners agreed substantially on their judgments of outcome. Comparisons between patient-examiner and patient-therapist correlations revealed no differences which achieved statistical significance. The lack of correspondence between subject and therapist ratings stands in contrast to research which has demonstrated substantial patient-therapist agreement on outcome measures.

The first major experimental question concerned the relationship between the proportion of behavior modification techniques in the therapy and the outcome of that therapy. Since there were few cases of a given kind of therapy, no analysis of specific technical features was possible. The general behavior therapy model, however, would seem to suggest that the treatment employing a greater proportion or ratio of given behavior modification techniques to other, supposedly less efficacious, psychotherapeutic techniques would be more successful than a treatment offering a smaller proportion or ratio. However, this was clearly not the case. There were no significant correlations between the degree to which the therapy was a behavior therapy and outcome as rated by subject, examiner, or therapist. A relative preponderance of behavior modification techniques was significantly associated with examiner's rating of relatively minor psychopathology, and subject's perception of contracting for fewer life problems, less liking the therapist, seeing him as less competent, and finding the techniques less pleasant.

Depending on the outcome rater and measure, successful treatment was significantly associated with subject liking his therapist, and vice versa; subject being confident the treatment

would work; subject perceiving the therapist as confident, persuasive, and satisfied with outcome; and the therapist's deliberate fostering of positive expectations. Age, socioeconomic status, and the number of hours of therapy were not significantly related to outcome.

These results suggest that the interpretation of outcome research in behavior therapy is bound by traditional cautions regarding the part of the patient's life being evaluated and who it is who is doing the evaluating. If the focus is on change in the presenting problems, one may come to different conclusions than if one examines general changes in the patient's adjustment and satisfaction. This may have substantial bearing on the differential success rates reported by psychodynamic and behavior therapists, reflecting, perhaps, differential emphases on general satisfaction with self and absence of disturbing target behaviors, respectively.

Behaviorists are generally identified with an emphasis on observable behaviors, whereas psychodynamic therapists generally deal with more subjective data. It is striking that, given these emphases, the latter raters should be consistently more in agreement with the patients' judgments. It may be that the experience of the interview generated a mutual frame of reference which artificially inflated subject-examiner agreement, but the low subject-therapist agreement requires a different explanation.

The findings suggest that the relative emphasis on behavior modification techniques in these therapies is not related in any way to outcome, no matter who rates it or what his criteria are. Despite the avowed commitment of the therapists to the behavior modification techniques, elements of the interpersonal relationship between them and their patients were the only factors significantly associated with favorable outcome. It appears that the techniques themselves were not nearly as important as general features of the therapist and therapeutic climate, the therapist's confidence in what they were doing, and their capacity to transmit that confidence to their patients.

The recruitment of subjects may have introduced volunteer biases, probably in the direction of appealing most to the patients with the greatest crusading needs. The above relationships are all correlational and therefore contribute no definitive causal understanding. Also, it has not been demonstrated that there is any necessary correspondence between what patients think was important in their therapies and what in fact was of importance. Conversely, there is no reason to assume that they cannot make valid judgments. The emphasis placed on technical considerations by behavior therapists makes the patients' failure to be impressed by those techniques all the more an intriguing finding. Finally, it is not clear whether these results are true of all or even most behavior therapies or only those in which similar behavior modification principles are employed within similar casework-supportive psychotherapy contexts.

Part 2

After rating the cases, but before studying the statistical analyses, each examiner listened first to the tapes of the interviews he had conducted and then to those of the other examiner, making notes and drawing conclusions. The material was analyzed impressionistically, and, when each had finished, notes were exchanged. Only those conclusions on which there was

a high degree of agreement were included.

Conclusions

1. For the most part, the patients in this sample had histories of psychological problems from childhood on. Most had been in treatment before, in a wide variety of settings, including psychoanalytic psychotherapy, supportive counseling, and other behavior therapies. What is striking is the pattern within which many of their treatment histories fell. Often the patients seemed to have taken a scattergun approach to the treatment of their problems, sampling therapy after therapy or technique after technique with little serious commitment to any. In no instance did the patients' repeated therapeutic failures become the subject of efforts at understanding or modification as a problem in their own right. There seemed to have been a distinct tendency for the behavior therapies to feed into established patient patterns of externalization of responsibility rather than confronting them, with the consequence that these therapies often failed as those before them had.

2. The behavior modification techniques themselves simply were not salient to the patients, even where the therapists had gone to considerable lengths to emphasize their rationale and potential usefulness. Some of the patients in this sample clearly liked the therapeutic methods. An equal number, however, complained of tedium or emphasized the artificiality of the technical interventions and the compromised sense of individuality they sometimes engendered. Their reports of practicing the techniques were sometimes falsified so as not to displease their therapists.

While they rarely mentioned techniques spontaneously, the patients hardly stopped talking about issues in the relationships between themselves and their therapists, however. Their comments centered around whether or not they liked their therapists and the degree to which they felt these feelings were reciprocated; how dependent or independent they felt; how they were getting along without regular visits to their therapists, and the like.

3. It seemed that just as in psychodynamic psychotherapy, elements of the transference intruded into these therapies. Often the presence of such elements could be inferred from peculiar turns or developments in the therapies or from feelings about the therapists that did not seem entirely accounted for by the reality of the situation. Other times, the patients' histories offered evidence of repetitious distortions in interpersonal relationships. Finally, even in their interviews, several of these patients formed immediate but unmistakable erotized or otherwise elaborated relationships with the examiners.

Transference reactions were particularly evident where the patient struggled to make the treatment succeed or fail in keeping with some unconscious motivations. There was, as well, considerable evidence of the kind of fantasy construction characteristic of patients playing out transference feelings. In some instances the coincidence in timing between developments in the therapy and important life decisions suggests that the patient may have been acting out feelings about the therapist. It was surprising, however, to observe how infrequently the therapists were aware of such phenomena or how little importance they attributed to them.

4. The majority of these treatments were to some degree successful, some of them impressively so. They tended to deal more effectively with presenting problems and specific difficulties

than with problems that arose during treatment, problems of general anxiety or distress, or with character difficulties. There was a general tendency for the treatments to work better on controlling the environment than on controlling oneself; the latter problem generally failed to respond and often aroused strong feelings of deprivation and anger on the patients' part.

Some clients expressed great general confidence for the future, but in other cases there was not only no generalization to problems which had not been dealt with, but no sense on the patients' part that they might expect such improvement. There was as well some evidence for "symptom substitution," in the sense of new psychological difficulties following the disappearance of older ones. Even in some of the most unambiguously successful cases, however, there were some reports of doubt or regret. The patients generally accepted the usual strategy of solving ongoing, highly denotable, well-defined problems, but they nonetheless expressed occasional wistful ambivalence about feelings and thoughts which they felt could not or should not be voiced.

5. About all that can be said with certainty is that there was no *one* "therapeutic" factor at work in these cases, but rather various combinations of a number of different factors. In some cases, the behavior modification techniques seemed clearly to have contributed to successful outcome, although their greatest effect seemed to lie not in the modification or elimination of specific "symptoms" or behaviors, but rather on their ability to demonstrate to the patient that there was hope he could achieve some mastery over the difficulties in his life. The therapists in this sample actively and successfully cultivated positive expectations in their patients, and the therapeutic usefulness of this is well documented. Some patients responded very positively to the scientific aura of the therapies; others were grateful for the insulation from a disturbingly close interpersonal relationship. On the other hand, some patients were so turned off by what they perceived as the coldness and mechanical quality of the techniques that they could not make use of them or any of the other features of the therapies.

Many of the therapeutic elements in these cases seemed to be traditional ones: straightening out difficulties in communication between spouses, legitimizing unrecognized aggressive feelings, and the like. However, it appeared that the interpersonal relationship between the therapist and patient was in and of itself therapeutically efficacious. The patients felt that the most universally helpful elements of their experiences were the therapist's calm, sympathetic listening, support and approval, advice, and "faith."

Future research in this area clearly should be experimental. Two particularly promising areas of investigation would involve (a) the collection of process data from behavior therapies and the comparison of ratings of both interpersonal and technical parameters with sensitive, long-term indexes of outcomes, and (b) the systematic manipulation, in analogue situations, of some of the interpersonal elements which this study suggests may be related to some successful behavior therapy.

Legal Issues Relating to Electroconvulsive Therapy

H. Richard Beresford

Suits against psychiatrists or psychiatric hospitals occasionally arise from the use of electroconvulsive therapy (ECT). At one time, some professional liability insurers apparently thought that the risk of injury from ECT was so great that they were reluctant to insure physicians or others who administered ECT. The current incidence of these suits is difficult to ascertain. It seems reasonably certain that the incidence has declined as the use of effective muscle relaxants has become more widespread. While few such cases reached the State appeals courts in 1968 and 1969, it is unclear whether they accurately reflect the extent of litigation in this area. Most professional liability cases are settled before trial and only a small fraction ever go as far as a State appeals court.

The following are several legal grounds on which a patient may rely in pressing a suit relating to ECT.

ECT not indicated—If a patient sustains an injury during ECT, the indication for which was not a generally accepted one, he might possibly prevail in a suit against the physician who ordered the treatment.

ECT too risky—A patient may submit that his preexisting medical status made ECT a prohibitive risk for him. In a recent case, an elderly woman asserted that a psychiatrist's negligence in failing to diagnose her osteoporosis before ECT entitled her to recover from him when ECT produced bilateral hip fractures. After hearing testimony of physicians, the court decided that her particular form of osteoporosis was not a contraindication to ECT and that, although the psychiatrist's failure to diagnose it before ECT was an error, this error did not directly cause her hip fractures.

No consent to ECT—One who does not consent in advance to ECT may contend that a resulting injury is in effect an assault and battery. In a few cases, plaintiffs have raised this argument, but the courts and other legal authorities have generally rejected it. One reason given has been that the potential therapeutic benefits of ECT and its low morbidity justify granting psychiatrists the discretion to use it without the consent of the patient in cases where it is clearly indicated. Another is that the patient's voluntary submission to ECT constitutes implied consent. A patient who consents to ECT may, after an ECT-related injury, assert his consent was not "informed" and therefore was invalid. Occasionally courts are willing to dispense with the requirement that consent be informed if there is evidence that informing the patient of risks will substantially worsen his psychological state.

ECT negligently performed—Before the near-routine use of muscle relaxants with ECT, several suits were brought by persons who sustained fractures and other injuries during ECT. The usual allegation was that the patient was negligently managed during ECT. The courts generally took the view that fractures and dislocations were accepted or inevitable risks of ECT and that, if proper indications for the use of ECT were present and standard precautions were taken, the injured person had no

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grounds for recovery. It may be that a patient who incurs a skeletal injury during ECT in a facility where muscle relaxants are not used would prevail in a lawsuit on the theory that he was negligently denied the protective benefit of these agents. Another facet of the liability problem relates to the use of muscle relaxants and anesthetic agents. These increase the risk of cardiac arrhythmias, hypotension, and aspiration pneumonia. Although such risks are often not preventable, an occasional case may arise where a person who sustains anoxic tissue damage during ECT will assert that a physician's or hospital's negligence was the root cause.

Negligent management after ECT—Injured patients have occasionally prevailed in suits where they have established negligence on the part of those caring for them during the period when they were confused after ECT.

Negligent failure to diagnose ECT-related injury—Even if an injury is deemed an accepted risk of ECT, an injured patient may nevertheless recover from a physician who negligently fails to diagnose his injury. Ordinarily, the injured person must introduce testimony of other physicians to establish the defendant's negligence. But in a recent case, the court indicated that a psychiatrist's failure to diagnose a patient's ECT-related vertebral fracture was negligent, even though the patient did not introduce physician testimony. The patient did, however, establish that the standards for ECT prepared by the American Psychiatric Association stated that a patient who complains of pain after ECT should receive a physical examination and X-ray. The psychiatrist did neither.

Negligent failure to administer ECT—Whatever the legal risks of administering ECT, there may be situations where not using it will raise legal problems. There are recent cases which suggest the possibility of future suits against psychiatrists or hospitals for failing to administer ECT. In one case, a former patient recovered $300,000 from the State for its negligent failure to give him proper psychiatric treatment during the 14-year period he was involuntarily committed to a State hospital. A patient who is involuntarily hospitalized for psychotic depression, and who does not receive ECT might later contend that the hospital negligently omitted a medically indicated and highly effective treatment. It is speculative how a court would receive this contention. But a general impression exists that many large psychiatric hospitals have afforded their patients no treatment or inadequate treatment. In this setting, some courts may be receptive.

In projecting about future litigation arising from the use of ECT, certain factors suggest that the legal risks of administering ECT are not substantial. First, the effectiveness of ECT as a treatment for major depressive illnesses no longer seems arguable. Second, ECT-related skeletal injuries are becoming rare as muscle relaxants are more widely used. Third, standardized procedures have been developed for performing ECT, which include the participation of anesthesiologists and the availability of resuscitative equipment. Fourth, given the efficacy and safety of ECT, courts will probably continue to regard ECT as a standard form of treatment for psychiatric disease rather than an exceptional therapy which they must scrutinize with skepticism.

Mental Health News Digests

New Laboratory of Stress and Violence

The Stanford University School of Medicine has received a grant from the Commonwealth Fund to support a university-wide program of research and education on the problems of human aggression and violence. The program, to be centered in a Laboratory of Stress and Violence, will be under the Department of Psychiatry and directed by Dr. David A. Hamburg, Professor and Chairman. Specialists from biologic, psychologic, and social sciences will develop a curriculum on problems of violence and aggression to serve as a model for other universities. Further information concerning this program is available from the Stanford University Medical Center, Stanford, California 94305.

National Clearinghouse for Alcohol Information

A National Clearinghouse for Alcohol Information will be established within the NIMH. Plans are underway for such a Federal facility designed to collect and disseminate all types of information on the subject of alcohol abuse and alcoholism. As currently envisioned, the National Clearinghouse for Alcohol Information will develop and operate several computer-based files; current plans include files for scientific literature, for public information documents and audiovisual materials, and for legislation relevant to alcohol programs. Also the Clearinghouse operations will include active referral, consultation, and publications programs. Initial planning for the Clearinghouse is being accomplished through joint efforts of the National Institute of Mental Health, the National Institute of Alcohol Abuse and Alcoholism, and the Department of Transportation.

79th Annual Convention of the APA

More than 12,000 psychologists participated in the 79th Annual Convention of the American Psychological Association, which was held September 3–7 in Washington, D.C. Highlights of the convention included a film presentation by the National Bureau of Standards on noise pollution, the second APA "Open Forum," in which hundreds of members discussed a number of current problems in the psychology field, a symposium on the role of television in childhood, and a special press conference with Dr. B. F. Skinner. Dr. Kenneth B. Clark delivered the annual APA Presidential Address. His topic was "The Pathos of Power: A Psychological Perspective." Dr. Edward E. David, Jr., Science Advisor to President Nixon, gave the APA Invited Address.

The APA also announced the winners of their 1971 National Media Awards. The awards were established in 1956 to recognize and encourage outstanding reporting which increases the public's knowledge and understanding of psychology. This year's awards went to David Prowitt, executive producer of National Educational Television, for the television documentary, *The Mind of Man*; Dr. Richard I. Evans, professor of psychology at the University of Houston, for the book, *Gordon Allports The Man and His Ideas;* and Emily Hahn, a freelance writer, for the two-part *New Yorker* article entitled "On the Side of Apes."

A special aspect of the convention was the establishment of the APA's first Child Care Center. A 5-day pro-

gram was devised to handle almost 500 children who came to the convention with their parent(s). Professional personnel and volunteers staffed the Center. Different activities were available to each age group. Activity rooms and field trips constituted the agenda. Trips included such places as the National Zoo, the National Gallery of Art, the Smithsonian museum, a concert, and a farm.

In other APA news, Dr. Leona E. Tyler, a leading authority on individual differences and counseling, has been elected President-elect of the APA. Dr. Tyler is the fourth woman to be chosen president of the APA. Among the other three women presidents is Dr. Anne Anastasi, the current President-elect. Dr. Tyler will assume her new position in December, when Dr. Anastasi succeeds outgoing President Dr. Kenneth B. Clark. Dr. Tyler will in turn succeed Dr. Anastasi as President in December 1972.

Maryland Training Program for Alcoholism Counselors

Under a grant from the NIMH, the Alcoholism Counselor Training Program, part of the Baltimore City Health Department, trains people from all over the country to become successful alcoholism counselors to answer the growing demand for qualified manpower in State and national alcoholism campaigns. The basic requirements are a high school diploma or the equivalent, but many of the trainees have had degrees or some college experience.

The first 2 months of the 6-month training period are concerned with lectures on alcoholism, alcohol, the alcoholic, counseling, and counseling techniques. Staff and visiting resource personnel from a variety of specialties act as lecturers to insure a well-rounded program. After the 2-month period, the trainees are placed in field assignments for a 4-month period. Field assignments are in general, university, and State hospitals. At the end of the training period, trainees attend The Johns Hopkins School of Public Health and Hygiene's 2-hour public seminar, a therapy session, and a 2-hour session at the Psychiatric Institute at the University of Maryland. They also spend time in court with the Municipal Court Alcoholism Counselor and 4 weekends in a general hospital emergency room. Many of the graduates have become Alcoholism Counselors in Maryland, earning $8,562 a year.

A Quarter-Way House, founded by the State Department of Mental Hygiene, treats patients who have left the emergency room but are not ill enough to stay in the hospital. This rehabilitation center is staffed primarily by alcoholism counselors. Since the beginning of the training program, many other agencies have included in their budgets requests for positions for alcoholism counselors.

A report on the program by Gladys Augustus, Co-Director of the training program, appears in the *Maryland State Medical Journal,* 20(7): July 1971.

Index to Mental Health Book Reviews

The *Mental Health Book Review Index* is an annual list of books selected and reviewed by specialists and organized as a bibliography by librarians. The list of books is based on a cumulative file of references to signed book reviews appearing in 288 English language journals, about one-third of which originate outside of the United States. Each annual issue of the *Index* lists about 300 books with references to three or more reviews for each

book; for each item at least one indexed review is from a journal of psychology, psychiatry, or psychoanalysis.

In addition to the book review index, list of journals indexed, and list of contributors, the most recent edition of *Mental Health Book Review Index* (Vol. 16, Whole No. 21, 1971) also features an editorial entitled "The Developmental Sciences: A Bibliographic Analysis of a Trend."

The *Mental Health Book Review Index* is sponsored by the World Federation for Mental Health, the International Council of Psychologists, and the Department of Psychology, New York University; it is published by the Council on Research in Bibliography, Inc. Subscription orders should be sent to *Mental Health Book Review Index*, Paul Klapper Library, Queens College of the City University of New York, Flushing, N.Y. 11367; price $10.00 per year.

New Publications

The Eleventh Annual Training Institute for Psychiatrist-Teachers of Practicing Physicians was held on March 11–13, 1971, in Albuquerque, New Mexico. Made possible through a grant by the NIMH, the Institute was cosponsored by the Western Interstate Commission for Higher Education and the University of New Mexico School of Medicine, Department of Psychiatry. The themes of the Institute were "Innovative Strategies for Continuing Education" and "Continuing Education and the Physician's Emotional Well-Being." A publication that contains edited and abridged versions of the papers presented is now available. Inquires concerning the publication or Institute should be addressed to the Western Interstate Commission for Higher Education, P.O. Drawer P, Boulder, Colorado 80302.

A report that is based on the working papers and discussions at a technical conference on the mental health of adolescents and young persons held by the World Health Organization, in collaboration with the Government of Sweden, in Stockholm June 9–13, 1969, is now available. The report is entitled *Mental Health of Adolescents and Young Persons.* Topics include youth and environment, juvenile delinquency, alcohol and drug dependence, mental disorders of adolescence, diagnostic and therapeutic services, and community medical and social resources. Copies are available from The American Public Health Association, Inc., 1740 Broadway, New York, N.Y. 10019.

Dynamics of Violence, a new paperback edited by Jan Fawcett, M.D., and published by the American Medical Association, contains papers covering the subject of violence from the standpoint of several fields of medicine and psychology. Papers include theoretical discussions, clinical observations, and research conclusions on the following topics: sociological, political, and historical aspects of violence; cycles of violence in our national history; psychological aspects of international violence; shortcomings of our present penal system; clinical investigations of violent individuals; and basic research on aggression. Copies of *Dynamics of Violence* may be obtained from the AMA Order Department, 535 N. Dearborn, Chicago, Ill. 60610; price $3.95.

Recent NIMH Publications

Single copies of these publications may be obtained from the Office of Communications, National Institute of Mental Health (Publications Issuance Unit, Room 1B64, Parklawn Building, 5600 Fishers Lane, Rockville, Md. 20852). A complete list of all publications available from the NIMH may also be obtained from the Office of Communications. If a price is given, the publication may be ordered in quantity from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Enclose a check or money order payable to the Superintendent of Documents.

Early Childhood Psychosis: Annotated Bibliography 1964-1969: This annotated bibliography contains over 400 abstracts of articles on infantile autism, childhood schizophrenia, and related disorders, subdivided according to their major emphasis. It was prepared by Carolyn Q. Bryson and Joseph Hingtgen of the Clinical Research Center for Early Childhood Schizophrenia, Indiana University Medical Center, Indianapolis, Ind. Sections pertain to the syndrome, intellectual development, perceptual processes, language, neurobiological correlates, treatment, and theory. Publication No. (HSM) 71-9062.

Developing Community Services for Alcoholics: Some Beginning Principles. This 39-page book attempts to bring together specific information about the disorder known as "alcoholism," and the principles involved in developing and delivering services to the "alcoholic" and to his family. Chapters include the nature of the problem, components of comprehensive community services, delivery of services, organizing community resources for a comprehensive alcoholism service, and evaluation. Publication No. (HSM) 71-9016. 50¢.

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